**Final Project**

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# Sant Antoni Market Hall

## Lighting Design Proposal

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Julissa Huamaní
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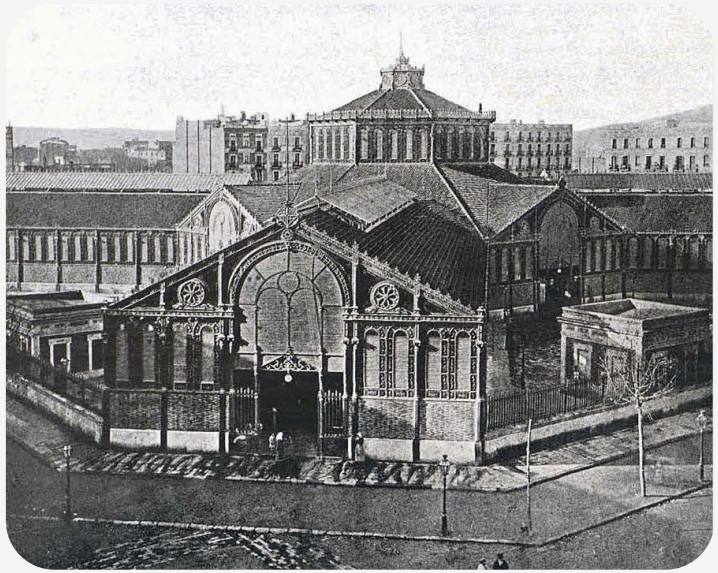
# Background.

***Middle Ages ( 1358 )***

**Medieval wall** to protect the city with the Portal of Sant Antoni



***1872 - 1882***

In the 19th century, over the remains of the wall, an **Iron Market** was built

***2009 - 2018***

About fifteen years ago, the market started its **rehabilitation**, uncovering the old wall that had been hidden below

# Users and Uses.

Buyers

Sellers

Neighbors

Visitors

Passersby

Families

Explore

Buy

Cross

Contemplate

Observe

Gather

Sell

Enjoy

Stay

# Public Space

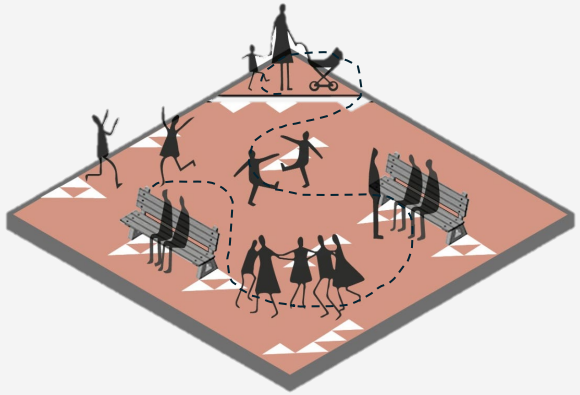
# Social Space

# Intimate Space

### Exploration

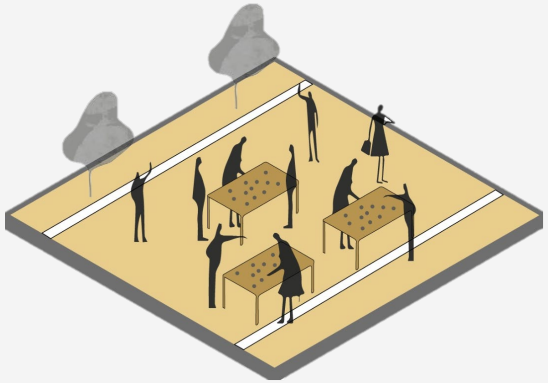
Moving, visiting, walking through, crossing

### Connection



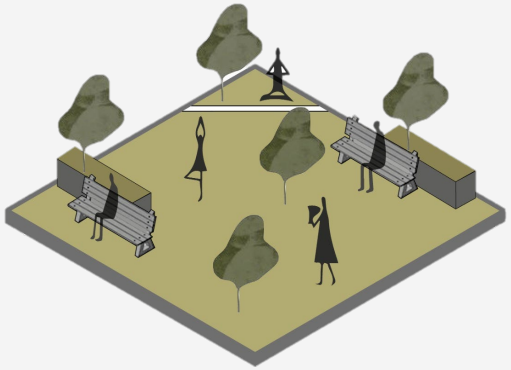
Social gatherings, playing, family reunions, community meetings

### Trade



Product exhibitions, buying, selling

### Contemplation



Resting, observing, contemplating, getting fresh air

*Community*

*Trade*

*Spontaneity*

*Human scale*

*Micro-activities*



# *Encounters*

***"Daily gestures that build community"***

***Sharing words, sharing looks***

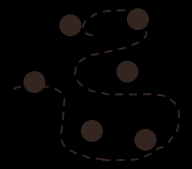
***Each corner holds a possibility***

Exploration

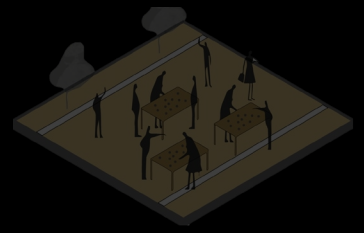
**Guidance Lighting**

Connection

Encounter Lighting

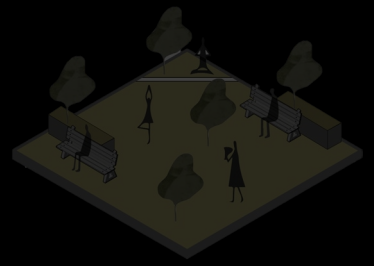


Trade



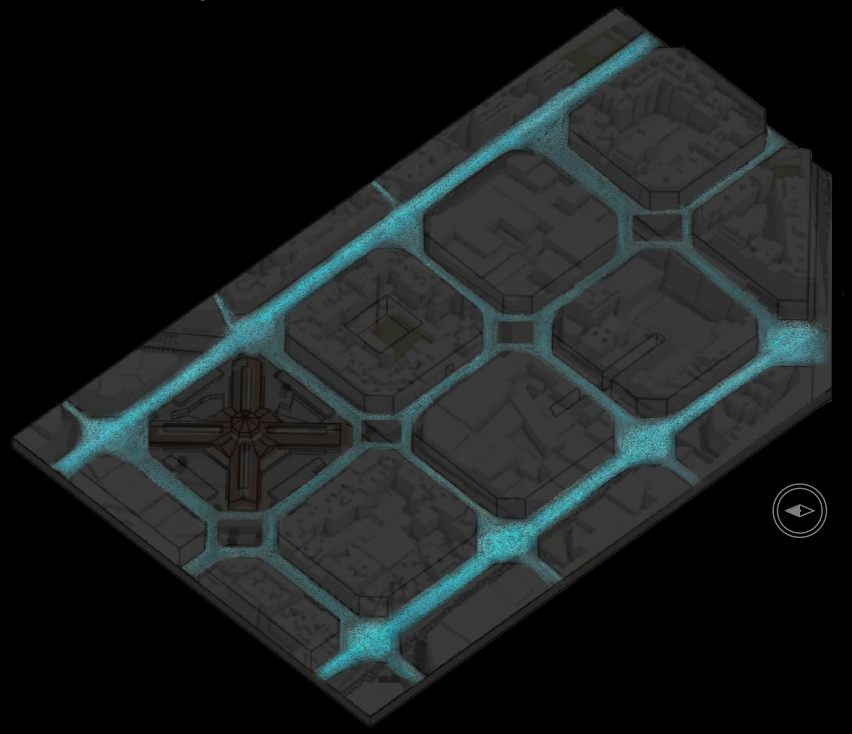
Interaction Lighting

Contemplation



Attraction Lighting

Intentions Map

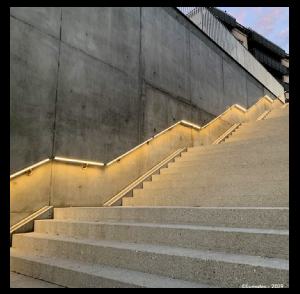


**Ambient Urban Lighting**

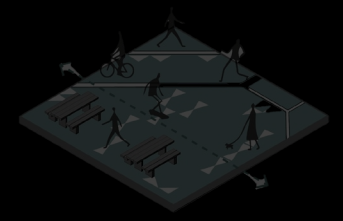
Vehicular

Pedestrian

**Wayfinding Lighting**

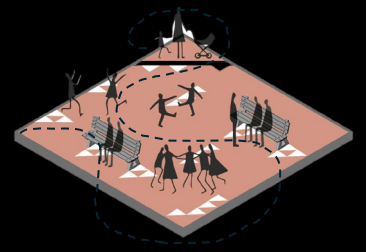


Exploration

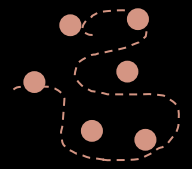


Guidance Lighting

Connection



Encounter Lighting



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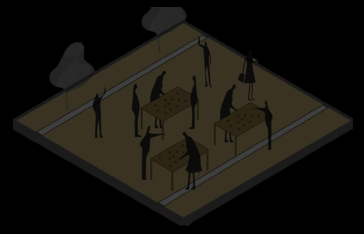
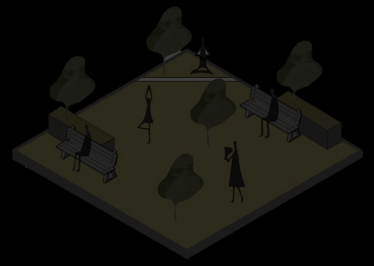


Interaction Lighting

Contemplation



Attraction Lighting

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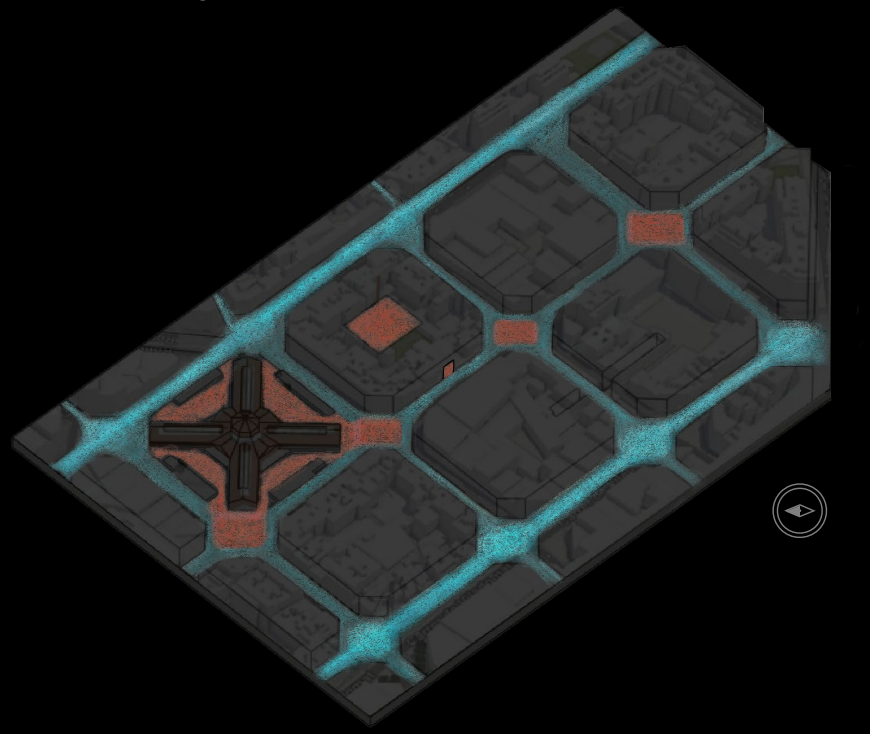
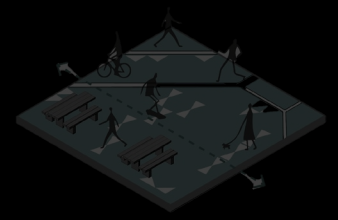


Focal Lighting

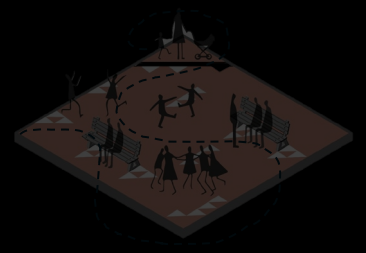
Urban Elements Lighting

Exploration

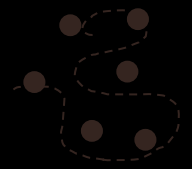


Guidance Lighting

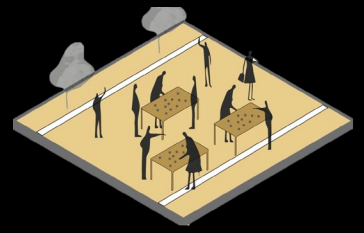
Connection



Encounter Lighting

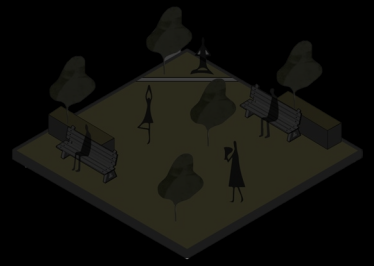


Trade



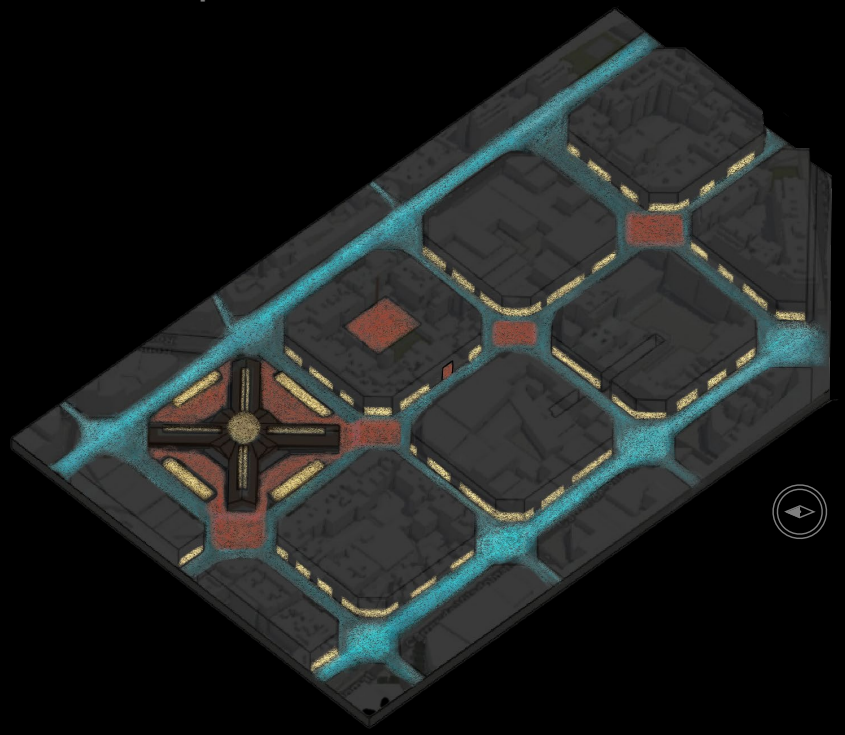
**Interaction Lighting**

Contemplation



Attraction Lighting

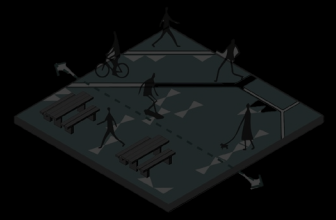
## Intentions Map



**Ambient Lighting**

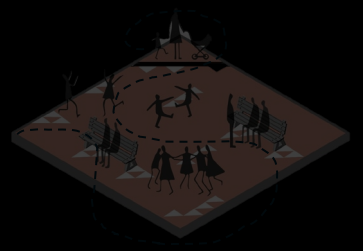
**Trade-focused Lighting**

Exploration

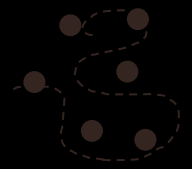


Guidance Lighting

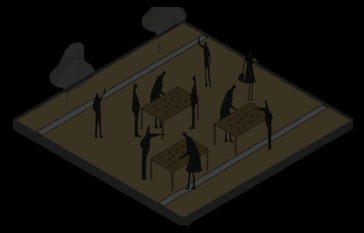
Connection



Encounter Lighting

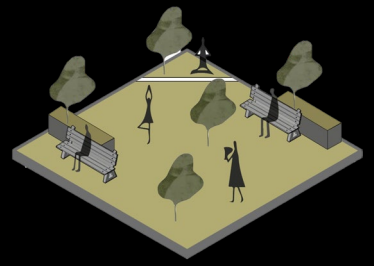


Trade

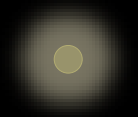


Interaction Lighting

Contemplation



**Attraction Lighting**



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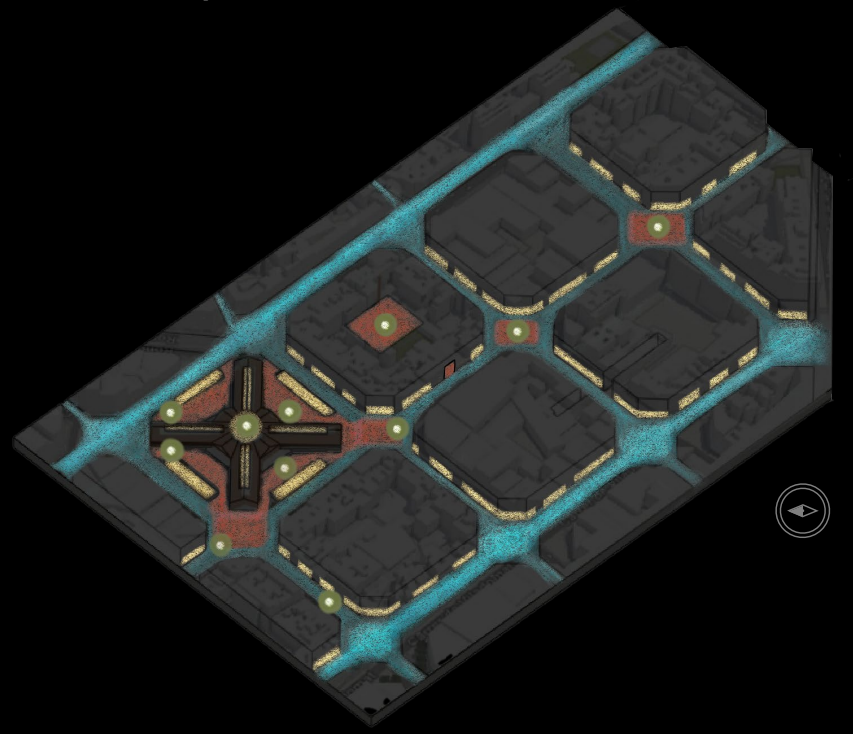
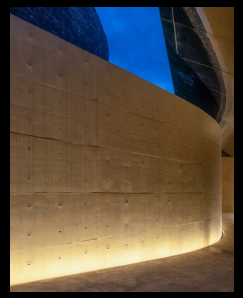
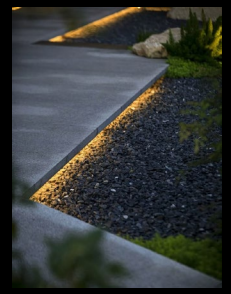


**Architectural Landmark Lighting**



**Landscape Lighting**



GUIDANCE LIGHTING
EVENING ATMOSPHERE THAT EVOKES WARMTH AND SECURITY
GUIDANCE LIGHTING
COZY AND ENVELOPING BACKGROUND LIGHT
ATTRACTION LIGHTING
SUBTLY HIGHLIGHT THE LANDSCAPING
ENCOUNTER LIGHTING
ON URBAN FEATURES THAT INVITES PEOPLE TO STAY

ATTRACTION LIGHTING
HIGHLIGHT THE MARKET ROOF AS A LANDMARK
ENCOUNTER LIGHTING
ACCENT LIGHTING ON THE BLEACHERS TO CREATE AMBIENT LIGHT AND ENCOURAGE SOCIAL INTERACTION
ATTRACTION LIGHTING
SOFT LIGHTING TO EMPHASIZE THE WALL'S MONUMENTALITY
GUIDANCE LIGHTING
THAT REINFORCES ORIENTATION AND CLARITY OF THE SPACE

## ATTRACTION LIGHTING

HIGHLIGHT THE MEDIEVAL WALL

## GUIDANCE LIGHTING

THAT INVITES EXPLORATION AND DISCOVERY OF THE SPACE

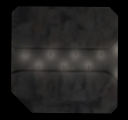
## ENCOUNTER / INTERACTION LIGHTING

FOCAL LIGHTING FOR SOCIAL INTERACTION, ADAPTABLE TO CREATE A MULTIPURPOSE SPACE (DANCE PERFORMANCES, BOOK FAIRS, AND EVENTS).

# Lighting Masterplan

## Guidance Lighting

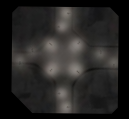
Main Traffic Road



Secondary Traffic Road

Pedestrian Way

## Encounter Lighting

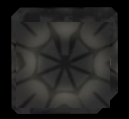


Pedestrian Plazas

## Interaction Lighting

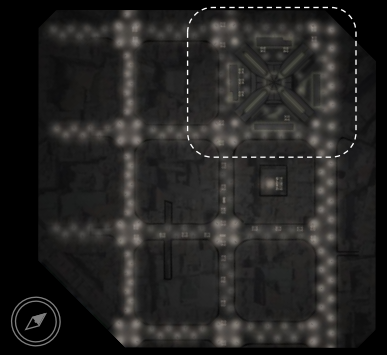
Pergolas

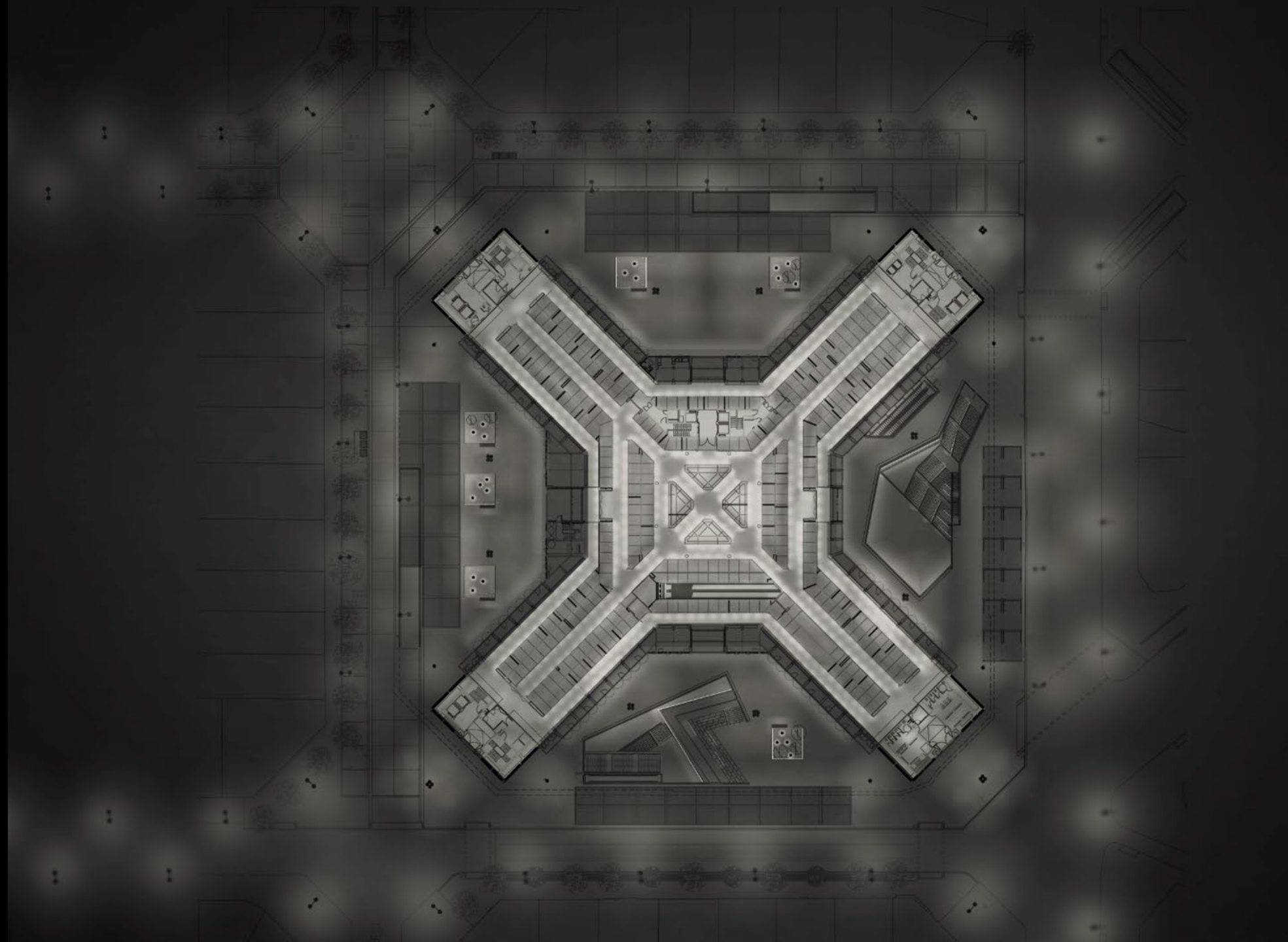
## Attraction Lighting



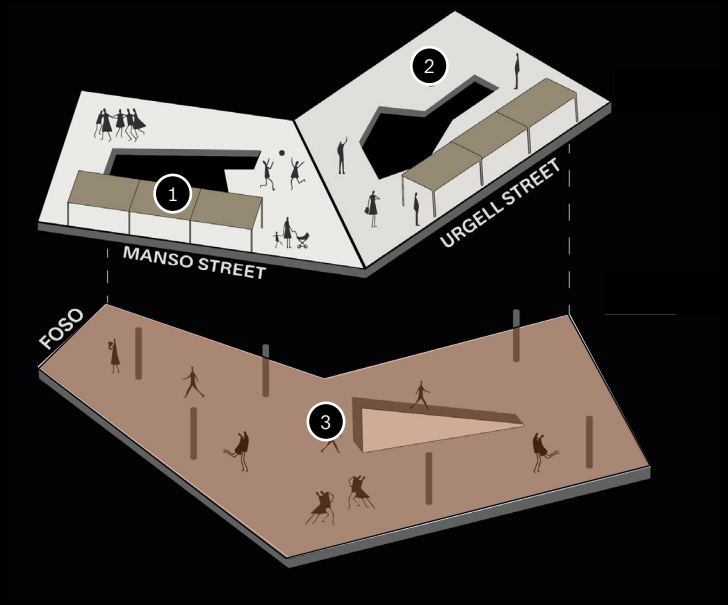
Sant Antoni Market Roof

# Lighting Masterplan





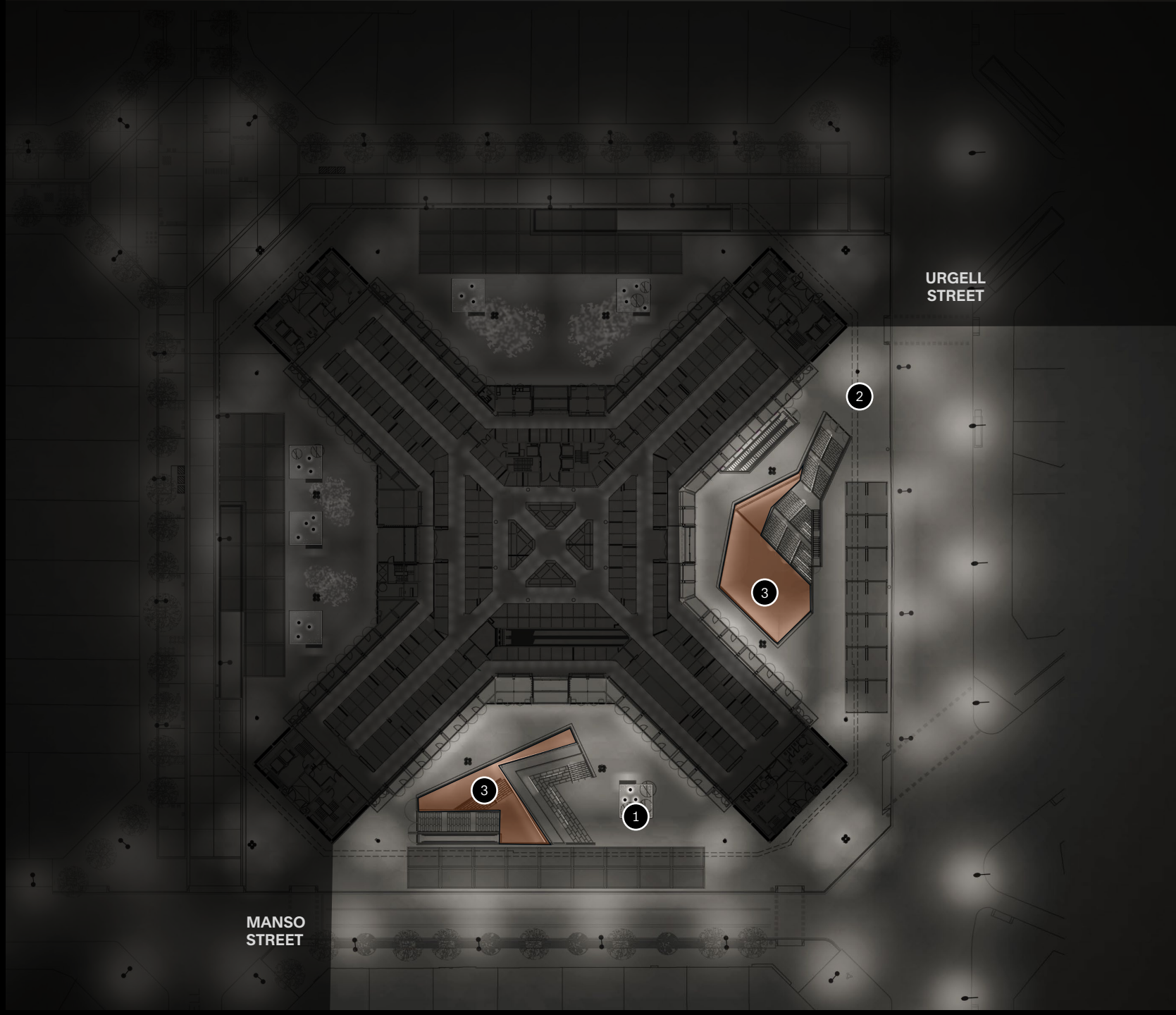
# Zoom Areas




1 Manso Square

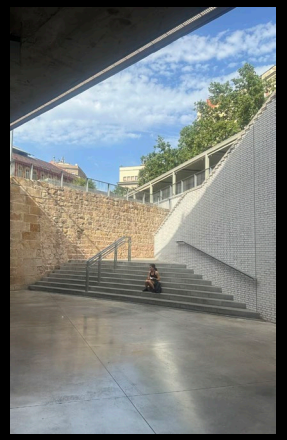
2 Urgell Square

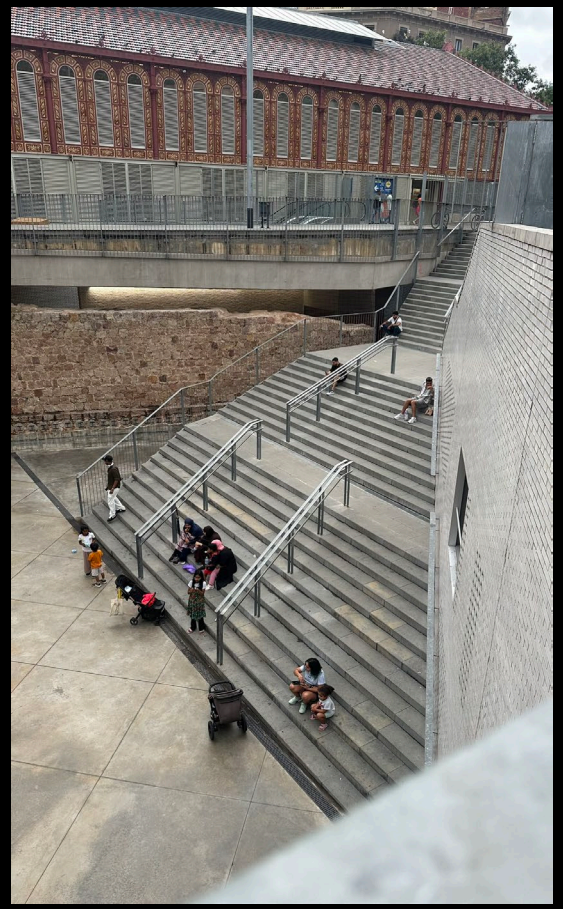
3 Underground Covered Plaza

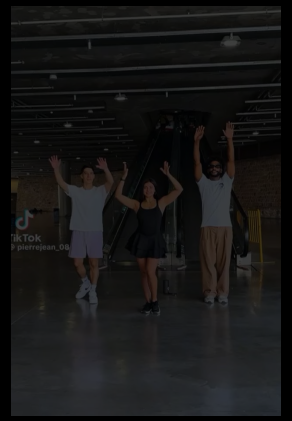


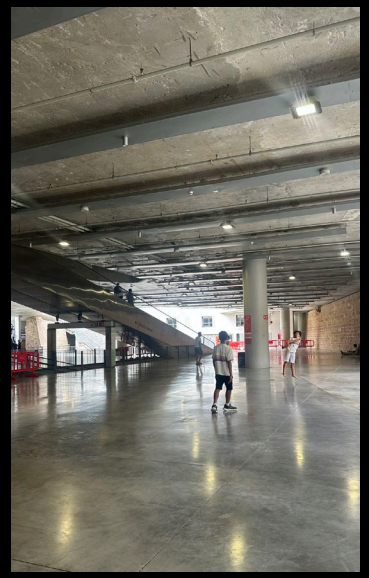
# Underground Covered Plaza

Zoom Areas



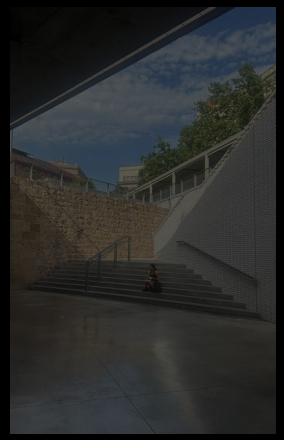


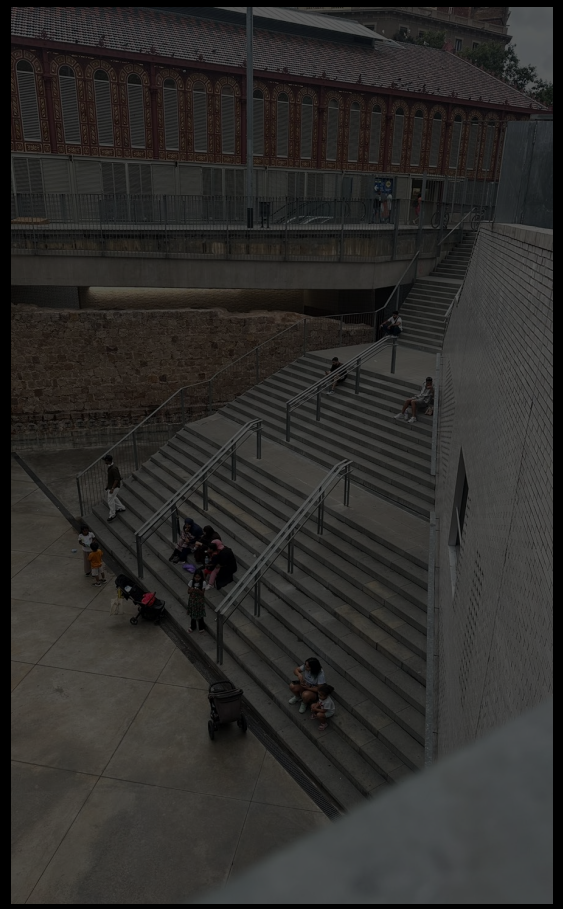


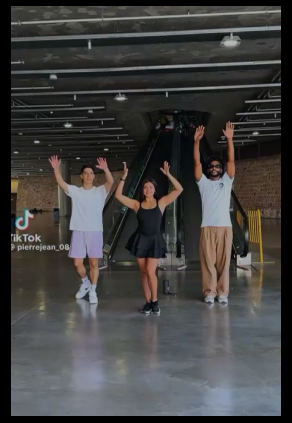


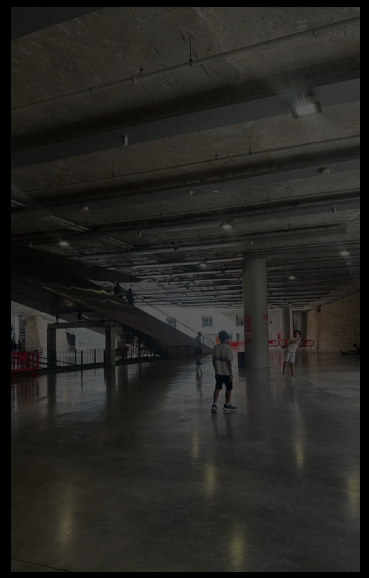
# Underground Covered Plaza

Zoom Areas



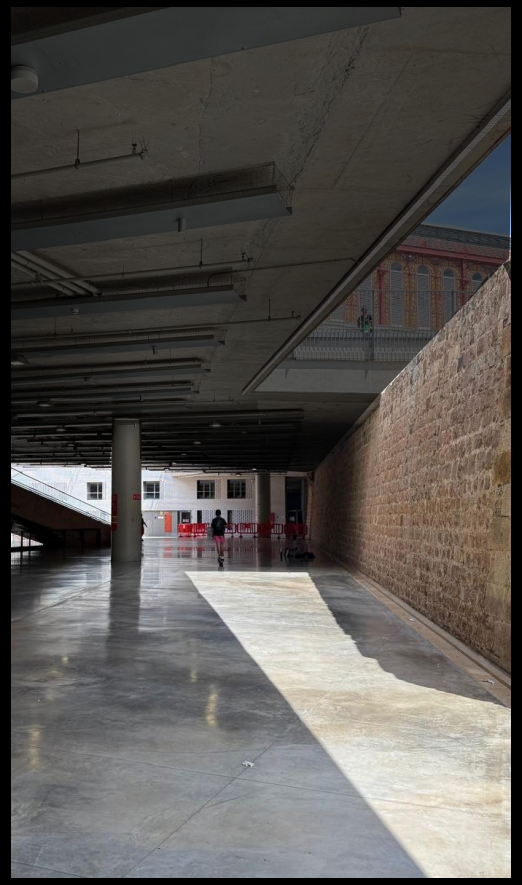




# Dessign Approach

Zoom Areas



Underground Covered Plaza

Urgell Square

Manso Square

***Connection*** *between the market and the medieval wall*

*Emphasize* ***urban flows*** *and dynamics*

*Promote the* ***versatility*** *of the space*

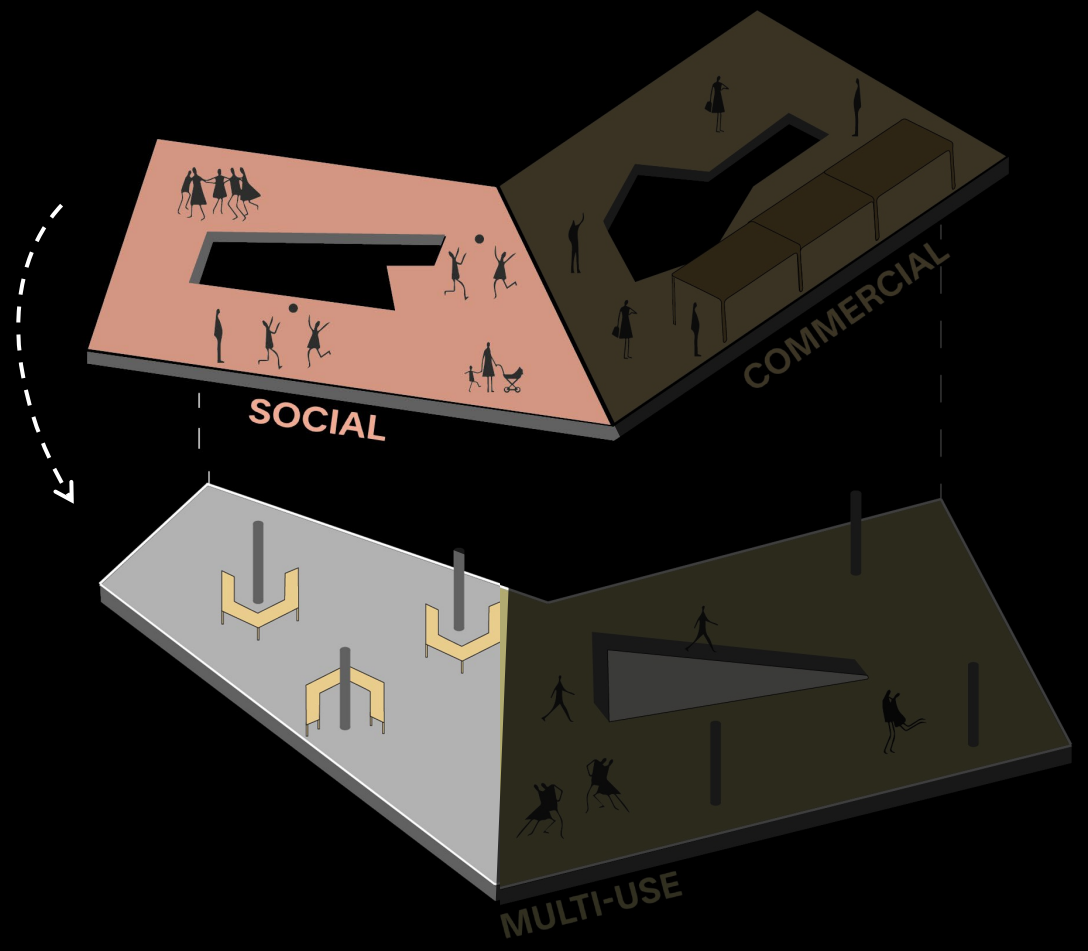
***Draw on architectural elements to create encounters through light***

# Dessign Approach

Strategies

### Manso Street

- Social space, to stay, meet and connect
- The pergola moves to the underground covered plaza on Sundays




### Urgell Square

- Commercial character
- We keep the pergola for book sales acting as a physical edge to the high-speed road.

### Underground Covered Plaza

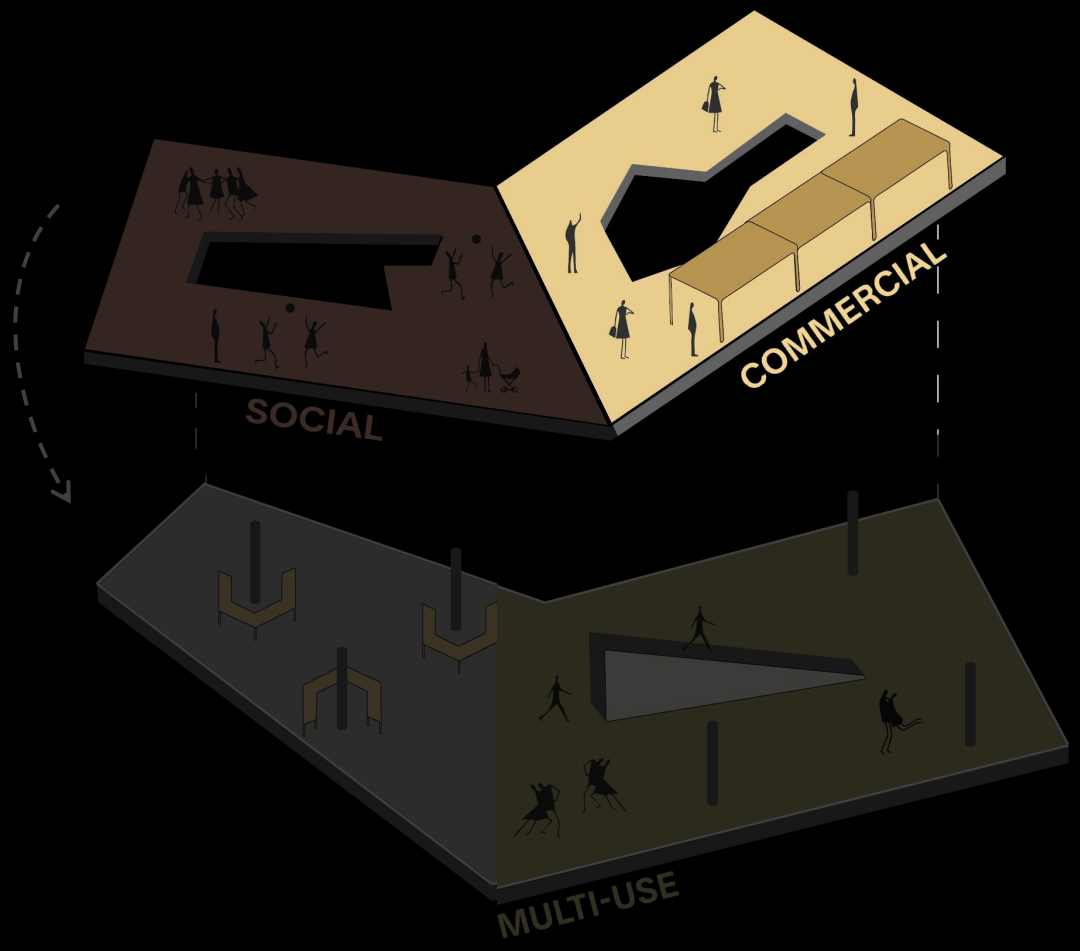
- Dynamic space through cultural and leisure activities, fairs, an auditorium, dance, where light creates the different atmospheres.

# Dessign Approach

Strategies

### Manso Street

- Social space, to stay, meet and connect
- The pergola moves to the underground covered plaza on Sundays




### Urgell Square

- Commercial character
- We keep the pergola for book sales acting as a physical edge to the high-speed road.

### Underground Covered Plaza

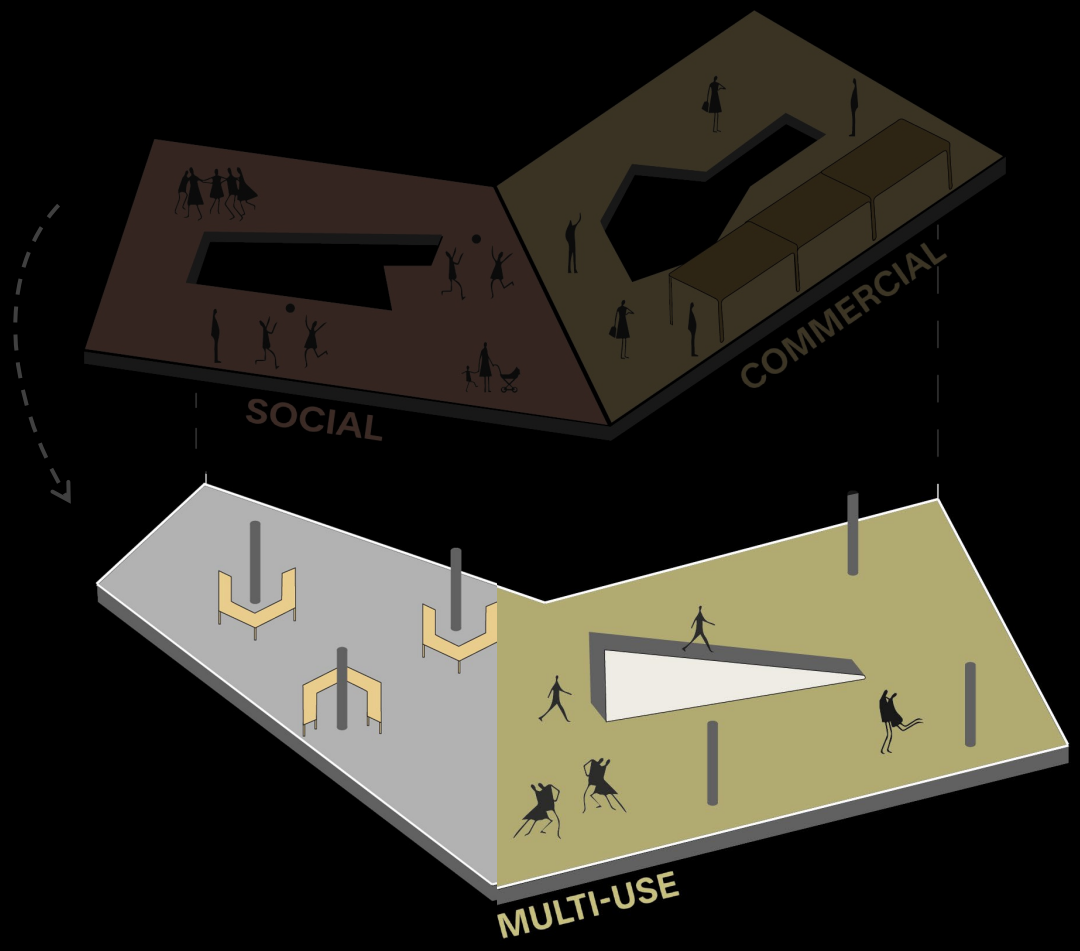
- Dynamic space through cultural and leisure activities, fairs, an auditorium, dance, where light creates the different atmospheres.

# Dessign Approach

Strategies

### Manso Street

- **Social space**, to stay, meet and connect
- The **pergola moves** to the underground covered plaza on Sundays




### Urgell Square

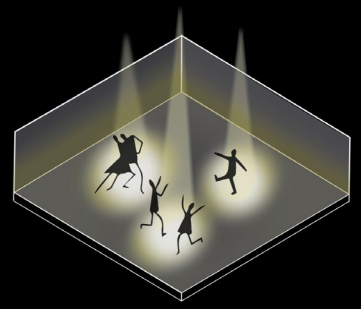
- Commercial character
- We keep the pergola for book sales acting as a **physical edge** to the high-speed road.

### Underground Covered Plaza

- **Dynamic space** through cultural and leisure activities, fairs, an auditorium, dance, where light creates the **different atmospheres**.

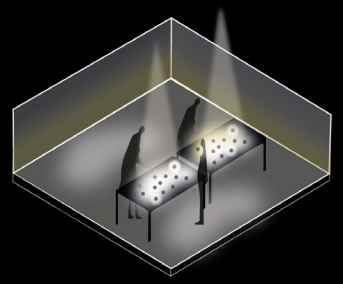
# Underground Covered Plaza

Lighting Intentions



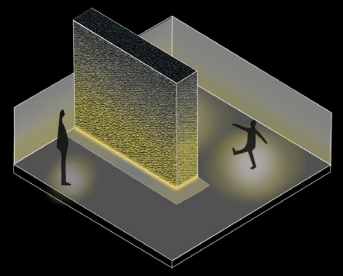
**Playful Atmosphere**

(urban stage, temporary installations)



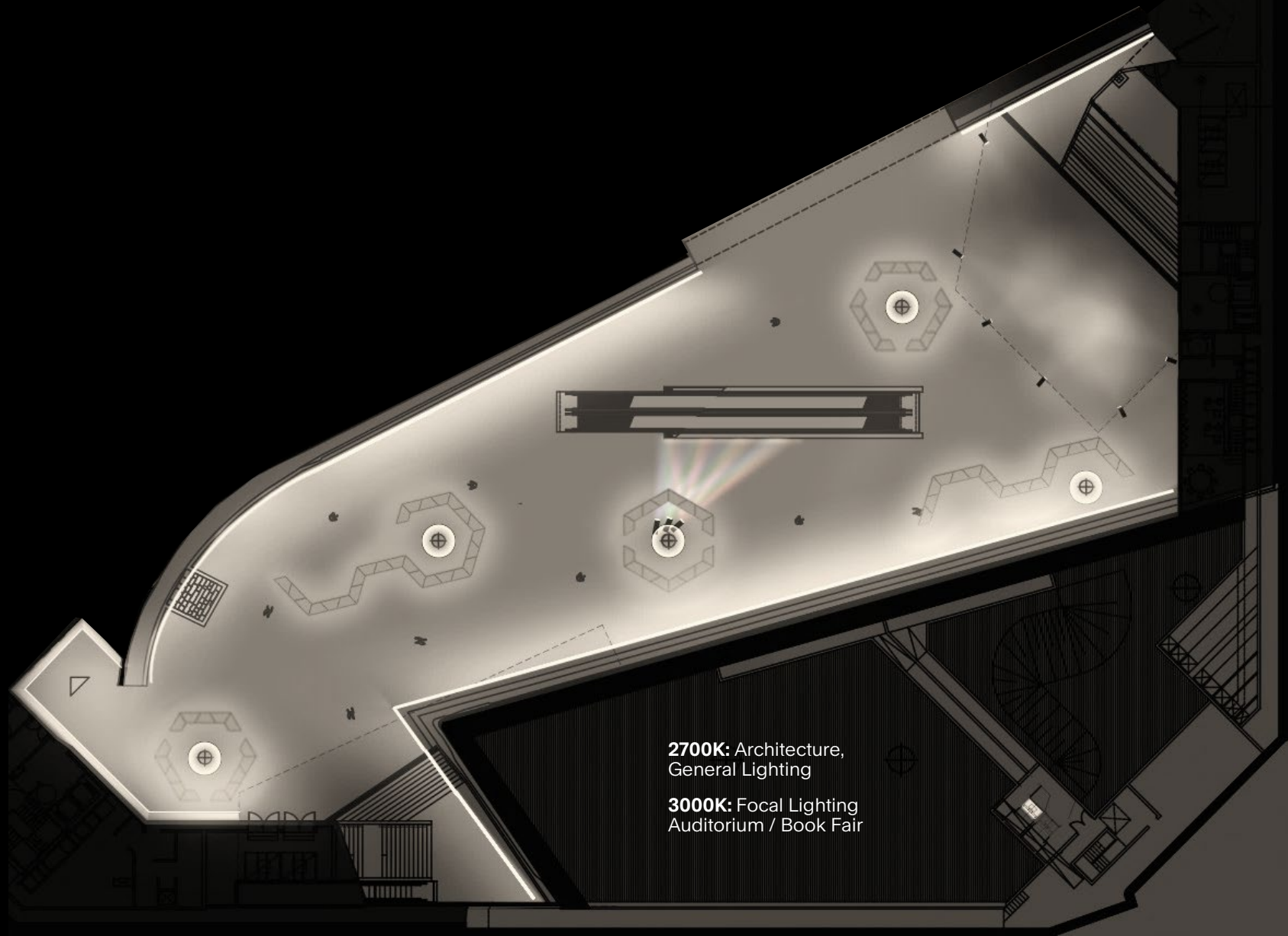
**Cultural Atmosphere**

(book fairs, workshops)



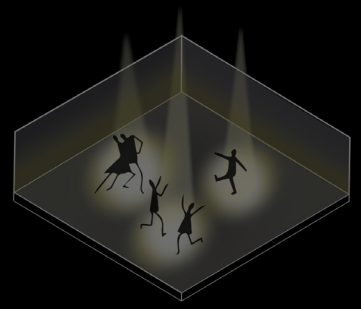
**Historical Atmosphere**

(medieval walls, columns)



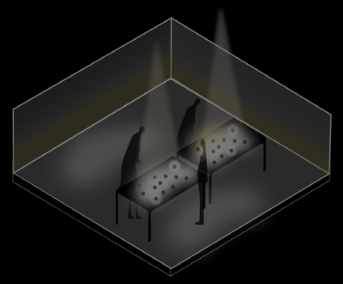
# Underground Covered Plaza

Lighting Levels



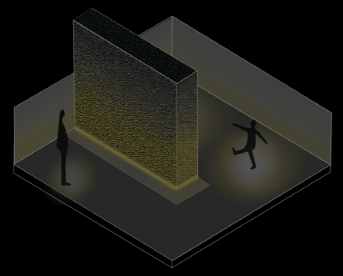
**Playful Atmosphere**

(urban stage, temporary installations)



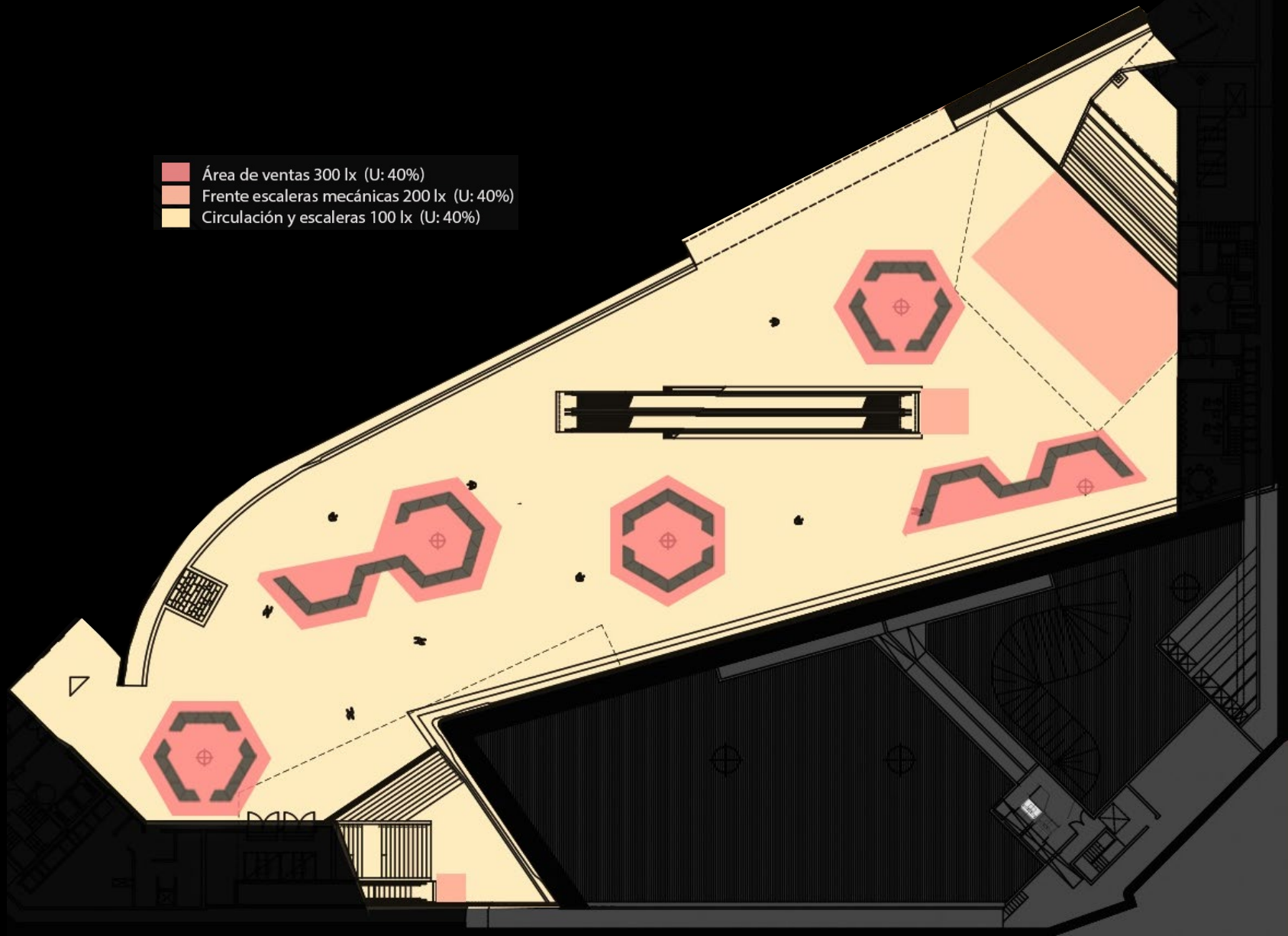
**Cultural Atmosphere**

(book fairs, workshops)



**Historical Atmosphere**

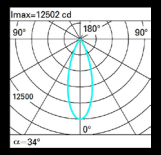
(medieval walls, columns)



# a. Playful Atmosphere

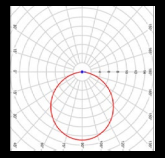
Underground Covered Plaza

## Performance Lighting

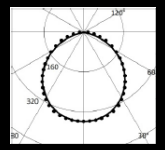



**P1.** Palco InOut – Luminaire with base
53 W - 4848 lm – 3000 K
Accessory: Diffuser Glass - Medium

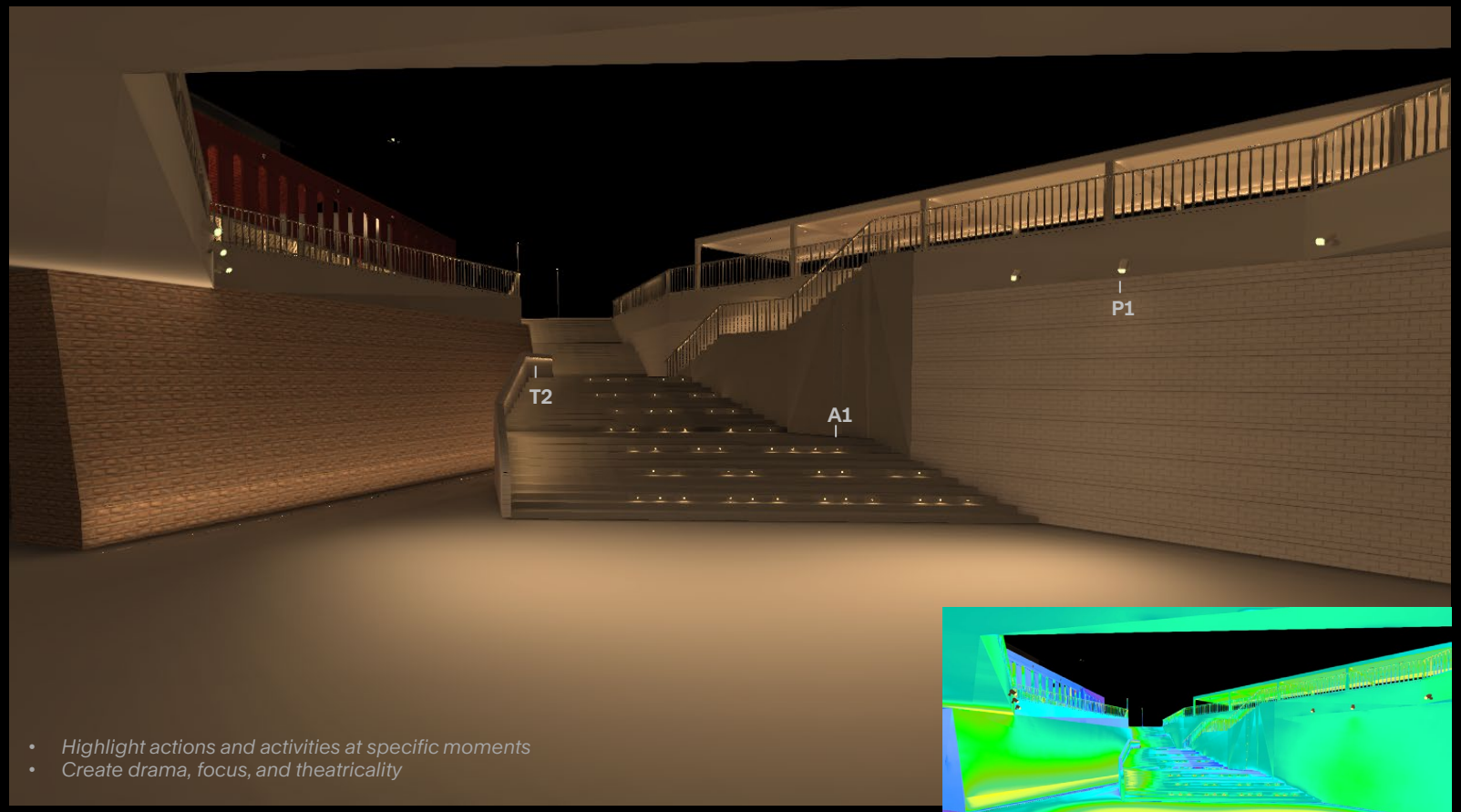
## Guidance Lighting



**A1.** Step light – Recessed
3 W - 54 lm – 2700 K
Very Wide Flood

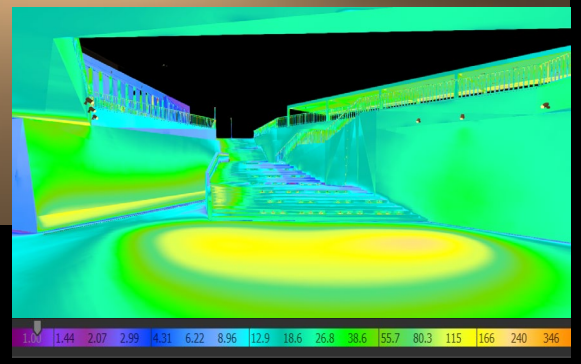


**T2.** Duraneon Flex Q Vert
9 W – 250 lm – 2700 K
Beam angle 120°



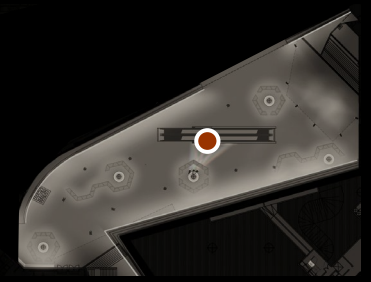

- *Highlight actions and activities at specific moments*
- *Create drama, focus, and theatricality*

120 lux – 250 lux average illuminance on the stage (Uo 0,40)

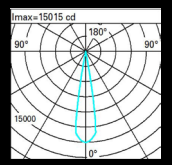


# a. Playful Atmosphere

Underground Covered Plaza



## Playful Lighting

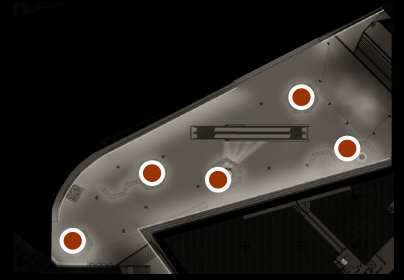


**P2.** Palco InOut + Framer 40 mm– Luminaire with base
44.2 W - 1513lm – 3000 K
Accessory: Shaper and RGB Filter - Medium

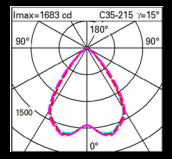
*Trigger shadow interaction that responds to movement*

# b. Cultural Atmosphere

Underground Covered Plaza

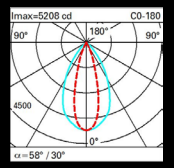


## General Lighting

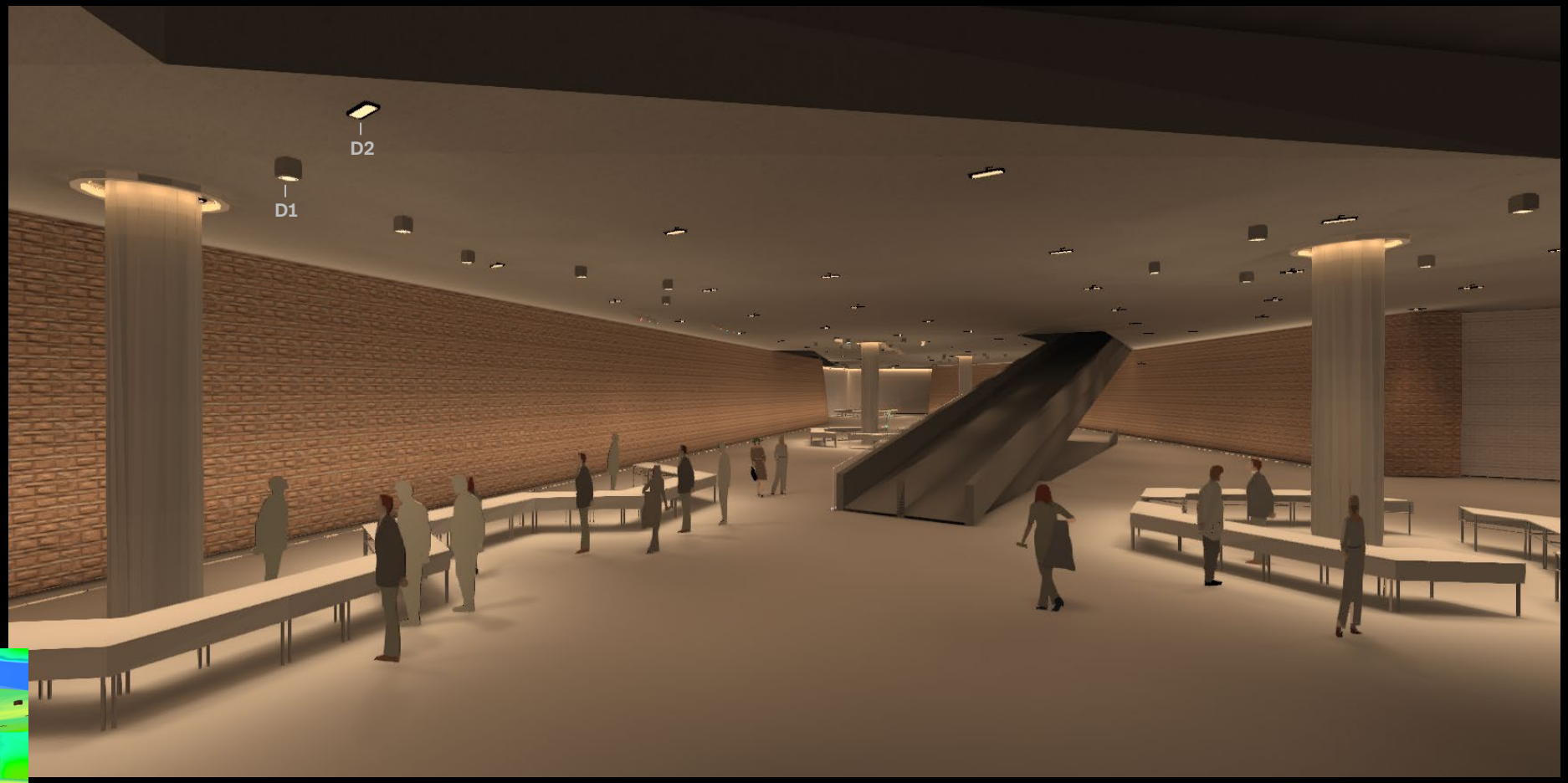


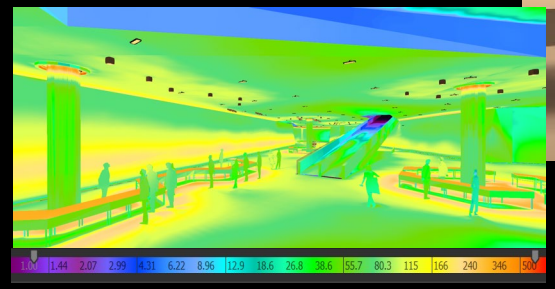

**D2.** Spacepad – Ceiling luminaire
20,8 W - 2340 lm – 2700 K
Accessory: Ceiling base – General Lighting

## Focal Lighting




**D1.** IPro – Outdoor ceiling luminaire
23 W - 2886 lm – 3000 K
Accessory: Elipticall

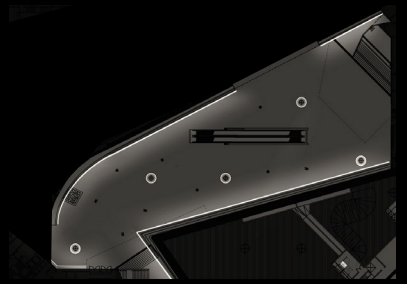


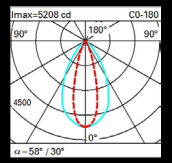

377 lux average illuminance on the table (Uo 0,90)

# c. Historical Atmosphere

Underground Covered Plaza

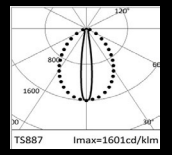


## Wallwashing

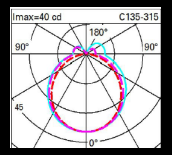



**L1A – L1B.** Lumenfacade – Recessed luminaire
17 W - 1817 lm – 2700 K / 35 W – 3634 lm – 2700 K
Wallwash (L= 636 mm / L= 1245 mm)

## Indirect Lighting




**L2.** Jedi Compact Outdoor – Lighting Niche
53 W - 5168 lm – 2700 K
Grazing (L= 1130 mm)

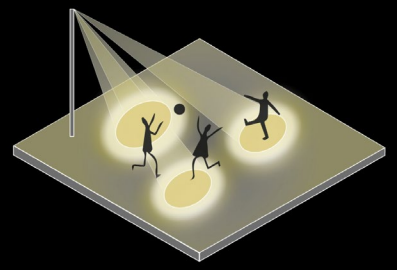



**T1A – T1B.** Underscore InOut – Lighting Niche
20 W – 1314 lm – 2600 K / 2,3 W - 153 lm – 2600 K
Beam angle 129° / 111° (L= 3m / L= 0,9 m)

97 lux average illuminance on floor (Uo 0,92)

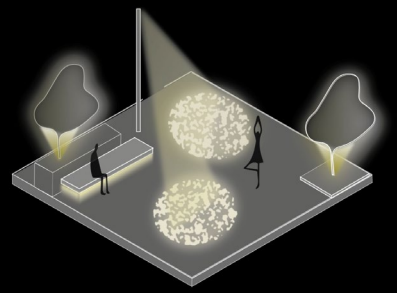
# Manso Square

Lighting Intentions and Levels



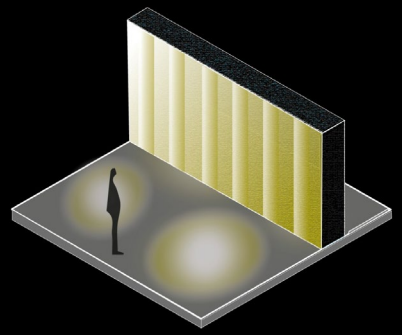
**Encounter Atmosphere**

(Social Gatherings)



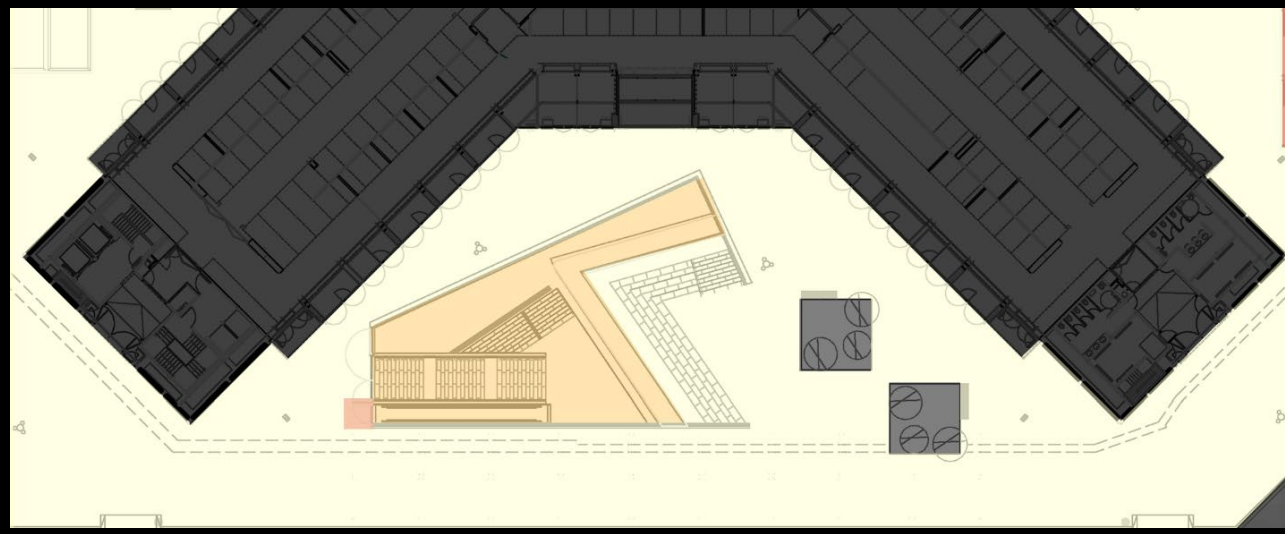
**Resting Atmosphere**

(Highlighting landscaping and urban elements)



**Architectural Atmosphere**

(Market Facade)

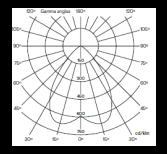
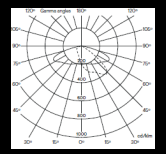


Frente escaleras mecánicas 200 lx (U: 40%)
Circulación y escaleras 100 lx (U: 40%)
Vía peatonal comercial 10 lx (U: 40%)

# a. Encounter Atmosphere

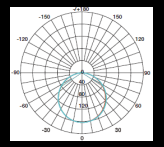
Manso Street Square

## Focal Lighting

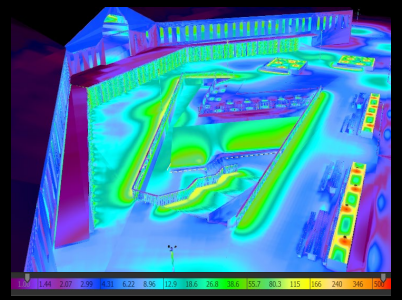



**C1 – C2.** Arne S – Pole mounted
11 W - 953 lm and 858 lm – 2700 K
Wide Flood and Asymmetric TIII

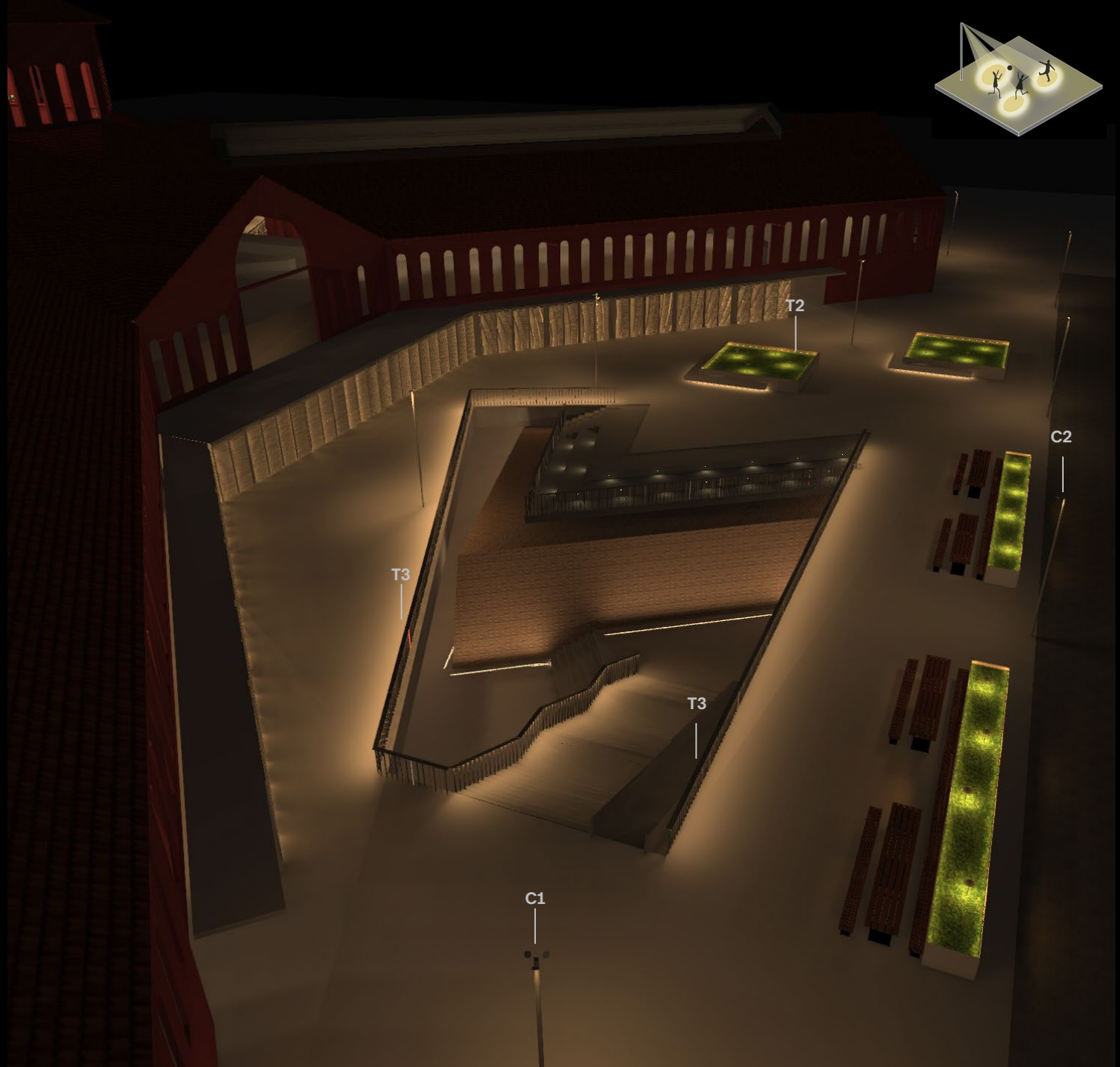
## Playful Lighting



**T3.** DiGi Neonflex with Digidot C4 Live
9 W - 251 lm – 2700 K
Bean angle 113°

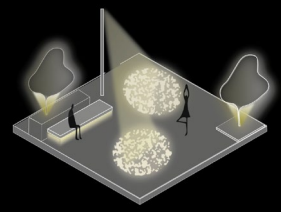


9,17 lux average illuminance on the stage (Uo 0,37)

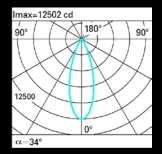


# b. Resting Atmosphere

Manso Street Square

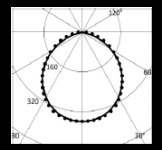


## Landscaping Lighting

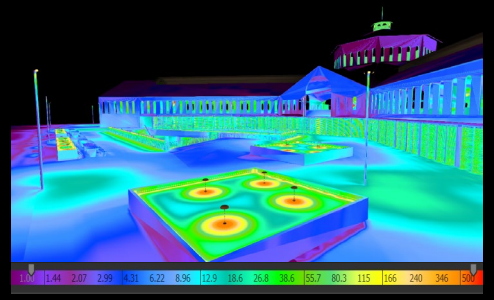



**B1.** Garden luminaire
5 W - 537 lm – 2700 K
Very Wide Flood

## Indirect Lighting



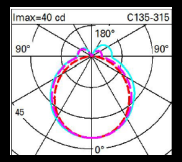
**T1.** Duraneon Flex Q Vert
9 W – 250 lm – 2700 K
Beam angle 120°



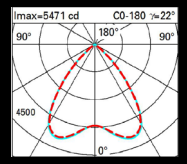
# c. Architectural Atmosphere

Manso Street Square

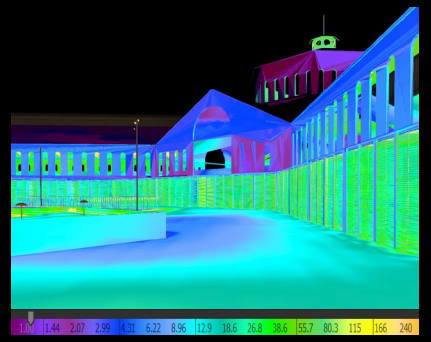
## Background Light




**T4.** Underscore InOut – Behind the perimeter fence
20 W - 1353 lm – 2600 K
Beam angle 140° / 109°

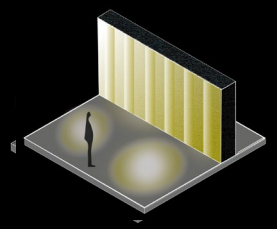


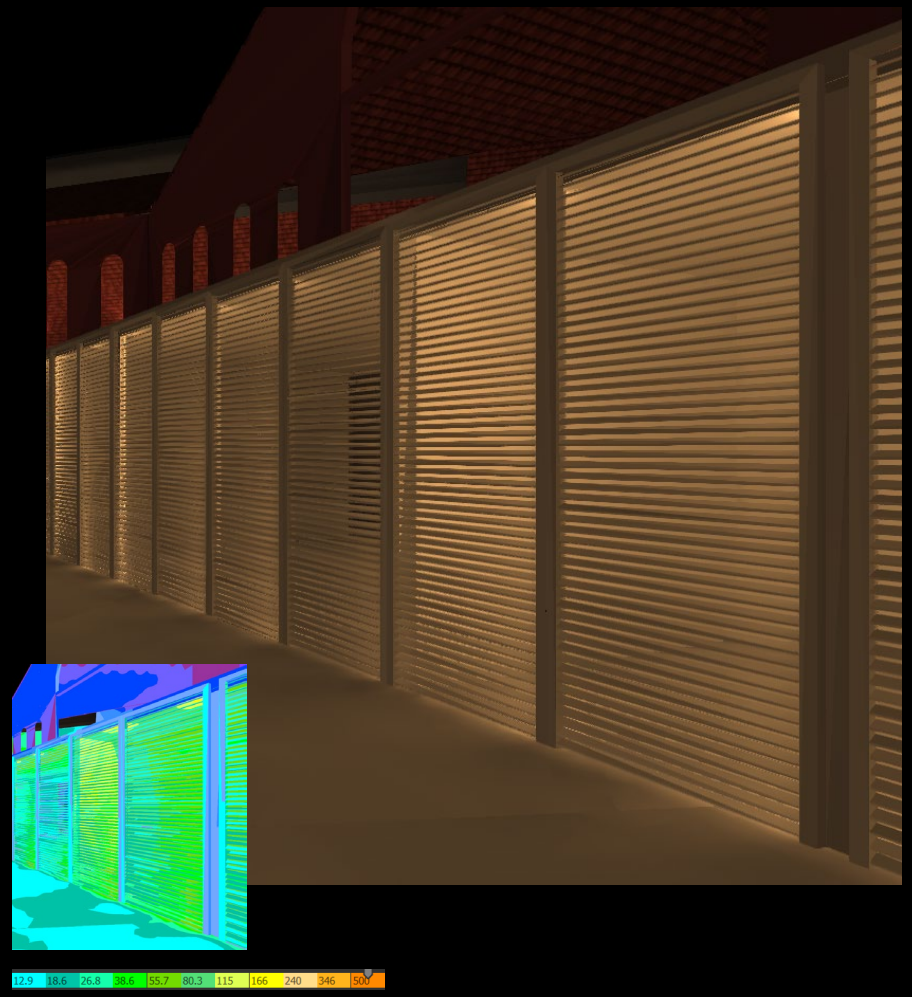

**P3.** Palco InOut – Inside the market hall
80 W - 8118 lm – 3000 K
Very Wide Flood



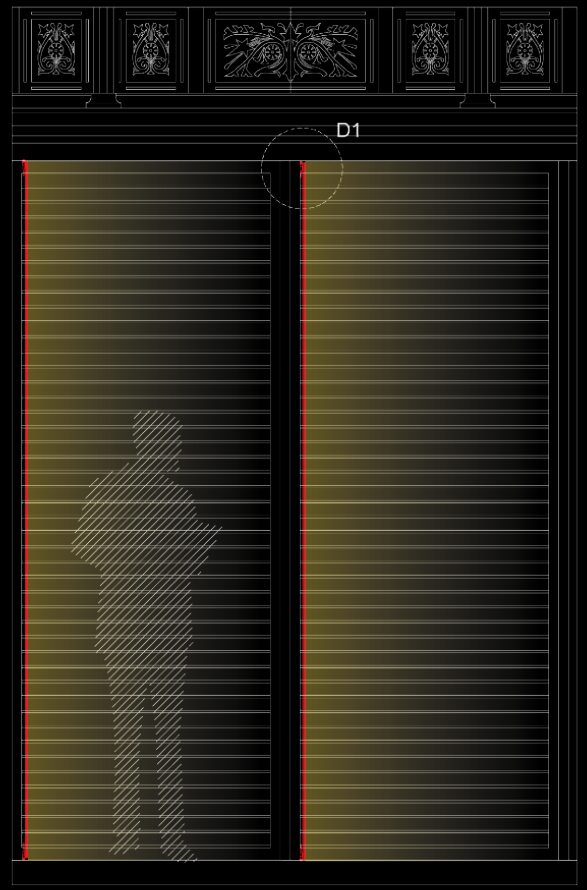
# c. Architectural Atmosphere

Manso Street Square

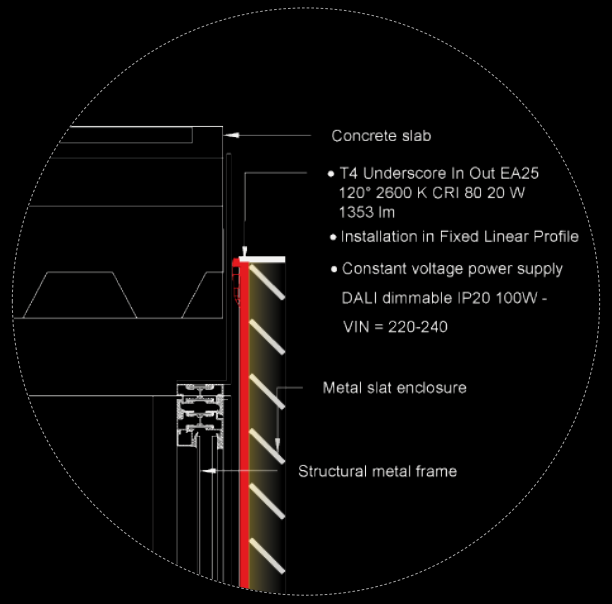





26 lux average vertical illuminance



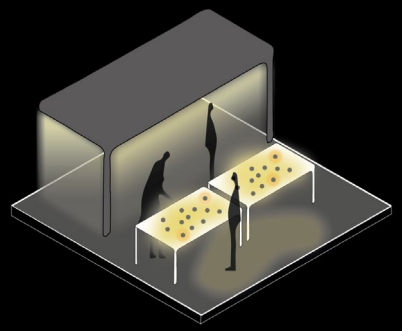

Metal Door Elevation




Detail 1

# Urgell Square

Lighting Intentions and Levels

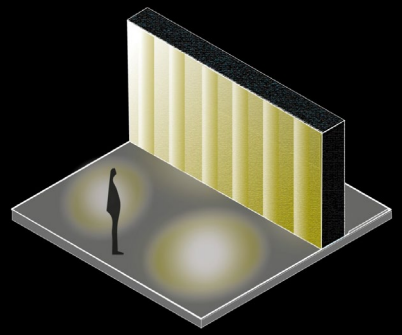


**Exchange Atmosphere**

(Book fairs)

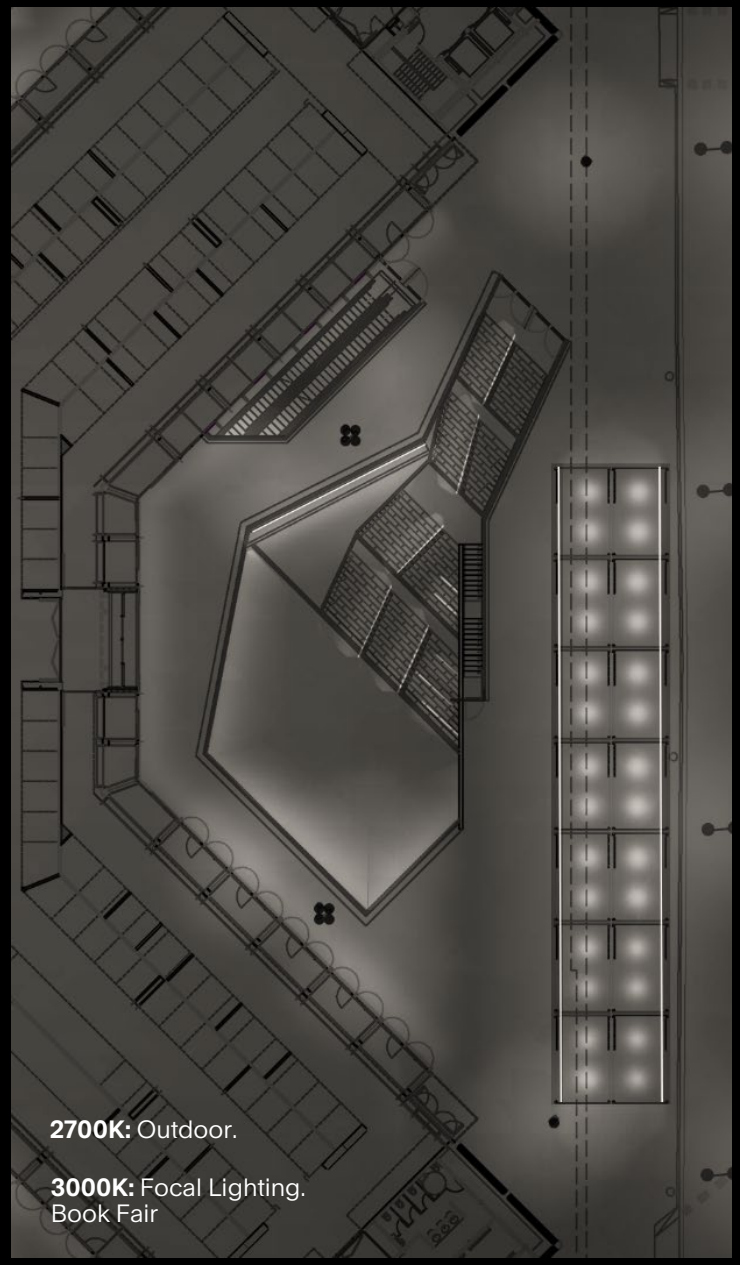
**Guidance Atmosphere**

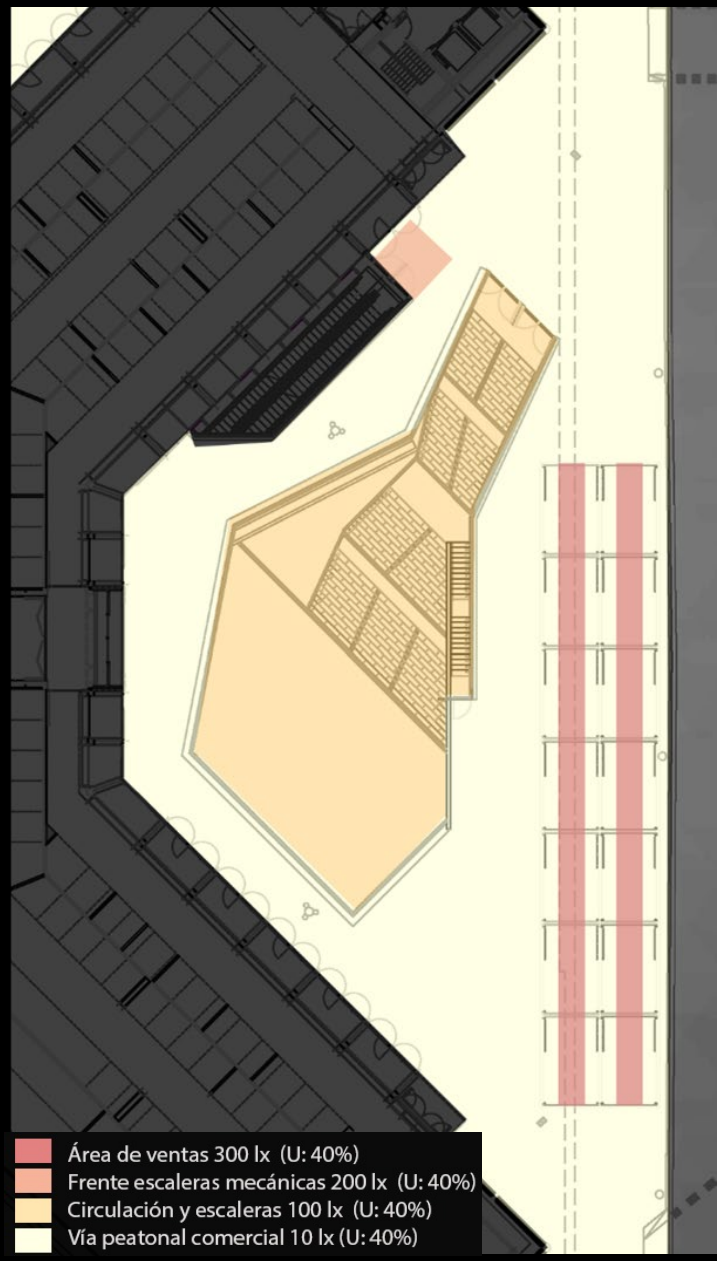
(General Lighting for circulation and visibility)



**Architectural Atmosphere**

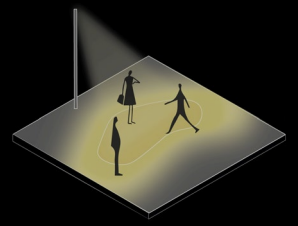
(Market Facade)



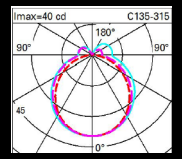



# a. Exchange Atmosphere

Urgell Street Square

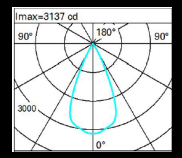


## Indirect Lighting

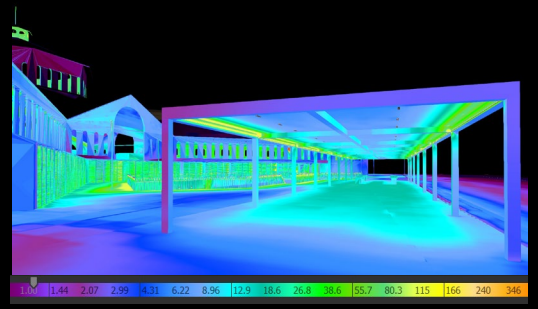



**T4.** Underscore InOut – Cove Lighting
20 W - 1353 lm – 2600 K
Beam angle 140° / 109°

## Focal Lighting



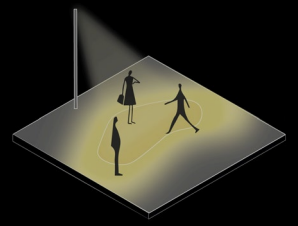

**L3.** LaserBlade InOut - Recessed
23,8 W - 1656 lm – 3000 K
Wide Flood



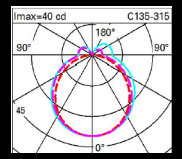

12 lux average illuminance on the floor (Uo 0,55)

# a. Exchange Atmosphere

Urgell Street Square



## Indirect Lighting

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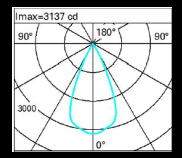
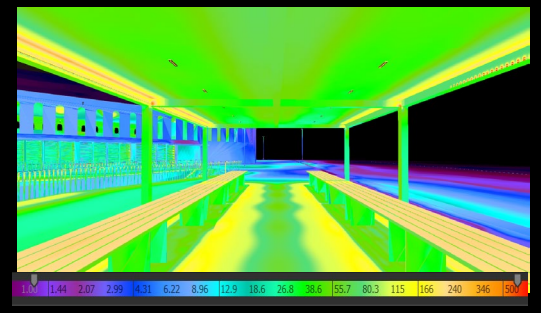
20 W - 1353 lm – 2600 K
Beam angle 140° / 109°

## Focal Lighting



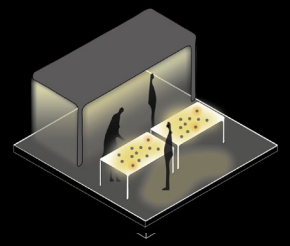

**L3.** LaserBlade InOut - Recessed
23,8 W - 1656 lm – 3000 K
Wide Flood



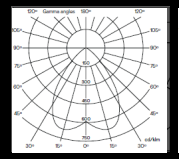

From 150 to 400 lux average illuminance on the tables (Uo 0,64)

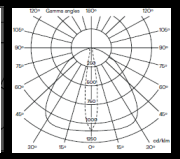
# b. Guiding Atmosphere

Urgell Street Square



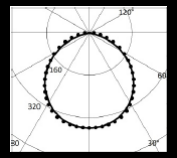
## Focal Lighting



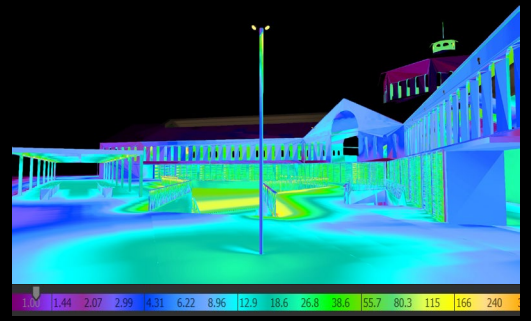


**C1 – C3.** Arne S – Pole mounted
11 W - 953 lm and 1370 lm – 2700 K
Wide Flood and Urban Lightable

## Indirect Lighting



**T2.** Duraneon Flex Q Vert
9 W – 250 lm – 2700 K
Beam angle 120°




12 lux average illuminance on the floor (Uo 0,40)

# Upper Hemisphere Flow

Manso Street Square and Urgell Street Square

Escena de iluminación activa: Escena luminosa molesta

Buscar

Resultados globales de la luz molesta

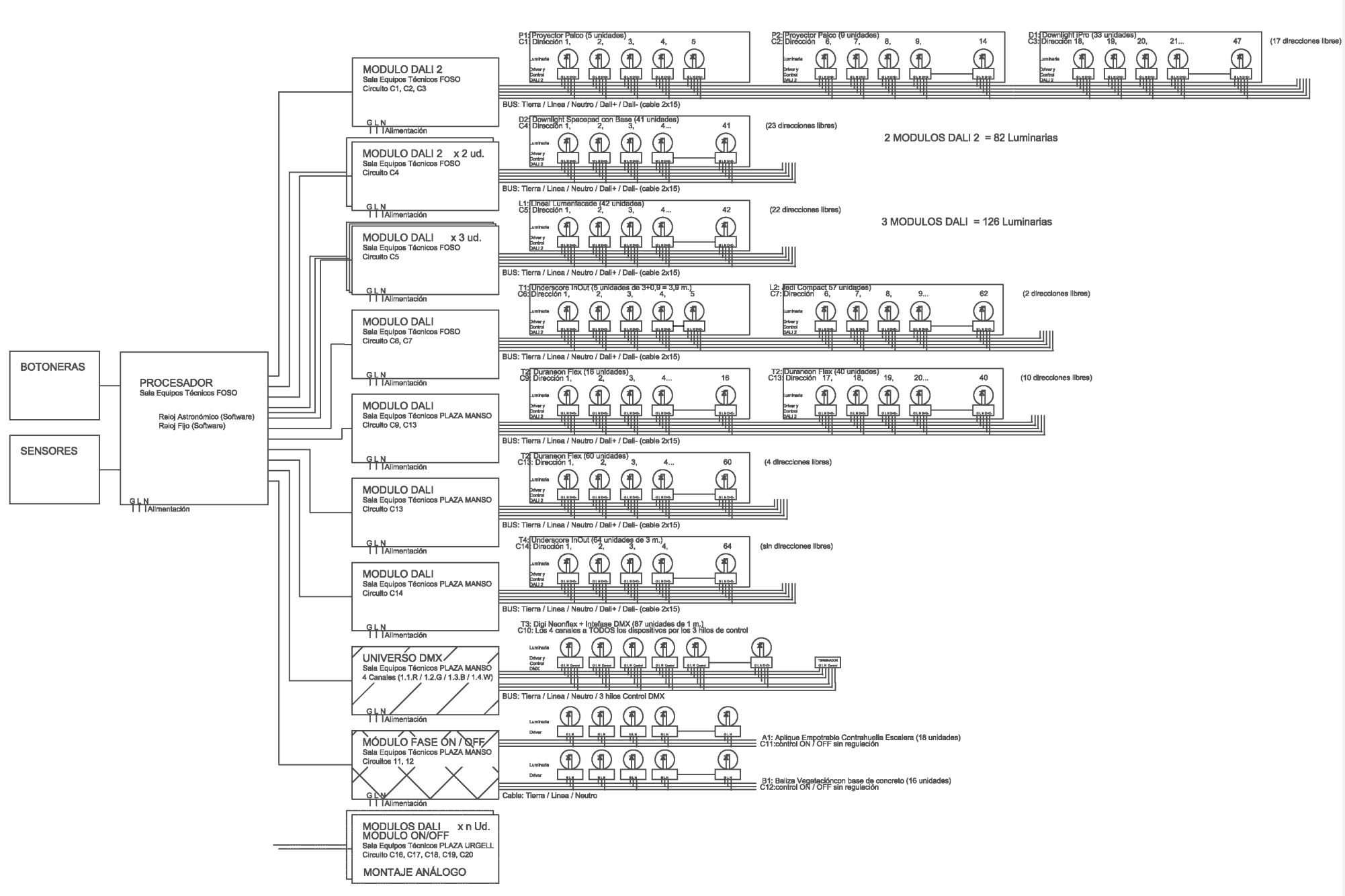
| Relación de flujo | | |
|---|---|---|
| $R_{UL}$ | 9.5 % | ≤ 15.0 % |
| $R_{DLO}$ | 79.0 % | |
| $R_{ULO}$ | 8.3 % | |

# Parametric Table

| | ATMOSPHERE | LIGHTING | TYPE | COMMENTS | Cod. | Pic. | MANUFACTUR | PRODUCT | REFERENCE | Un. | Optic | Temp. | CRI | W/Un | Lm sist | Cd máx | W | Circuit | Control |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Covered PLAZA** | Playfull | Performance | Surface Proyector | *On the stage* | P1 | | IGUZZINI | Palco InOut + Cristal Difusor | EI77 + X313 | 5 | Medium 30° + Difusor 34° | 3000 K | 80 | 53 | 4 848 | 12 502 | 265 | C01 | DALI-2 |
| | Playfull | Playfull | Surface Proyector | *RGB h=1,5 m* | P2 | | IGUZZINI | Palco InOut Perfilador | EJ36+GOBO40A + FILTRO R/G/B | 9 | Framer 24°+ Lente 40 mm MAX | 3000K+ RGB | 80 | 44,2 | 1 513 | 11 074 | 398 | C02 | DALI-2 |
| | Cultural | Focal | Surface Downlight | *On the tables* | D1 | | IGUZZINI | iPro + Eliptica | EQ16 + BZ80 | 33 | Fllood 32° + Eliptica 58° 30° | 3000 K | 80 | 23 | 2 886 | 5 208 | 759 | C03 | DALI-2 |
| | | General | Surface mounted lineal light | ***NATURAL LIGHT SENSOR*** | D2 | | IGUZZINI | Spacepad Base Superficie | RS73.S4 + MXZ2 (base) | 81 | General Lighting 60° | 2700 K | 90 | 20,8 | 2 340 | 1 787 | 1 685 | C04 | **DALI-2** |
| | Historical | Wallwash | Recessed lineal light | *50 cm from the wall, tilt 2,5° (L=636 mm)* | L1A | | LUMENPULSE | Lumenfacade Inground | LOI RO 120/277 **24** 27K WW TS2.5 DALI | 35 | Wall Wash | 2700 K | 80 | 17 | 1 817 | 5 398 | 610 | C05 | DALI |
| | | | | *51 cm from the wall, tilt 2,5° (L=1245 mm)* | L1B | | | | LOI RO 120/277 **48** 27K WW TS2.5 DALI | 90 | Wall Wash | 2700 K | 80 | 35 | 3 634 | 10 795 | 3 137 | C05 | DALI |
| | | Indirect | Recessed in column niche | *Around the columns (Perimetre 3 m)* | T1A | | IGUZZINI | Underscore IN/OUT | EA46 | 5 | Beam angle 129° / 111° | 2600 K | 80 | 20 | 1 314 | 340 | 100 | C06 | DALI |
| | | | | *Around the columns (Perimetre 0,9 m)* | T1B | | | | EA42 | 5 | Beam angle 129° / 111° | 2600 K | 80 | 6 | 394 | 102 | 30 | C06 | DALI |
| | | | Recessed in niche | *(L=1130mm)* | L2 | | TARGETTI | JEDI Compact Outdoor | 1T6788DA | 57 | Grazing | 2700 K | 80 | 53 | 5 168 | 8 269 | 3 021 | C07 | DALI |
| | | | | | | | | | | | | | | Total Power | | | 10 005 | W | |
| | | | | | | | | | | | *Surface* | *2822* | *m2* | ***Installed Power Densit*** | | | ***3,55*** | ***W/m2*** | |
| **MANSO Square** | Encounter | Focal | Pedestrian Pole | *8 LEDS Proyectors (H=5,5 m)* | C1 | | URBIDERMIS | ARNE S 11W 8 2700 350 WF | 2700 ARPS08A3WF | 21 | Wide Flood 60° | 2700 K | 80 | 11 | 953 | 610 | 231 | C08 | DALI |
| | | | Pedestrian Pole | *8 LEDS Proyectors (H=5,5 m)* | C2 | | URBIDERMIS | ARNE S 11W 8 2700 350 TIII | 2700 ARPS08A1TIII | 2 | Asimétrica TIII | 2700 K | 80 | 11 | 858 | 489 | 22 | *C08* | DALI |
| | | Indirect | LED strip under benches | *IP65 IK07* | T2 | | 3F Filippi-DURALAMP | DURANEON FLEX-Q -VERT | 10UV240927 | 16 | Beam angle 120° | 2700 K | 80 | 9 | 250 | 85 | 144 | C09 | DALI |
| | | | LED strio under handrail | *DIGITAL LED IP68 IK08* | T3 | | 181 | DIGI NEON FLEX TOP BEND | 3167346 + DiGidot C4 Live | 87 | Beam angle 113° | 2700 K | 80 | 9 | 251 | 80 | 783 | C10 | **SPI+Inter DMX** |
| | | Guidance | Step Light | *IP65* | A1 | | BEGA | Luminaria Empotrable | 33882K27 | 18 | Very Wide Flood 120° | 2700 K | 80 | 3 | 54 | 15 | 54 | C11 | ON/OFF |
| | Resting | Indirect | Garden Luminaire | *IP65 IK07* | B1 | | BEGA | Garden luminaire UniLink | 84859K3 50CM | 16 | Very Wide Flood 120° | 2700 K | 80 | 5 | 537 | 200 | 80 | C12 | ON/OFF |
| | | Indirect | LED strip around the garden | *IP65 IK07* | T2 | | 3F Filippi-DURALAMP | DURANEON FLEX-Q -VERT | 10UV240927 | 100 | Beam angle 120° | 2700 K | 80 | 9 | 250 | 85 | 900 | C13 | DALI |
| | Architectural | Background | Behind the perimeter fence | *(L=3m)* | T4 | | IGUZZINI | Underscore IN/OUT | EA25 | 64 | Beam angle 140° / 109° | 2600 K | 80 | 20 | 1 353 | 324 | 1 280 | C14 | DALI |
| | | Background | Inside the market hall | *Not included in indoor calculations* | P3 | | IGUZZINI | Palco IN/OUT | ES93 | 0 | Very Wide Flood 80° | 3000 K | 80 | 80 | 8 118 | 5 471 | 0 | C15 | DALI-2 |
| | | | | | | | | | | | | | | Total Power | | | 3 494 | W | |
| | | | | | | | | | | | *Surface* | *2040* | *m2* | ***Installed Power Densit*** | | | ***1,71*** | ***W/m2*** | |
| **URGELL Square** | Exchange | Focal | Recessed mounted in the ceiling | *On the tables* | L3 | | IGUZZINI | Laser Blade InOut | BX75 | 42 | Wide Flood 47° | 3000 K | 90 | 23,8 | 1 656 | 3 137 | 1 000 | C16 | DALI-2 |
| | | Indirect | Recessed in ceiling niche | *(L=3m)* | T4 | | IGUZZINI | Underscore IN/OUT | EA25 | 28 | Beam angle 120° | 2600 K | 80 | 20 | 1 353 | 324 | 560 | C17 | DALI |
| | Guiding | Guidance | LED strio under handrail | *IP65 IK07* | T2 | | 3F Filippi-DURALAMP | DURANEON FLEX-Q -VERT | 10UV240927 | 140 | Beam angle 120° | 2700 K | 80 | 9 | 250 | 85 | 1 260 | C18 | DALI |
| | | Guidance | Step Light | *IP65* | A1 | | BEGA | Luminaria Empotrable | 33882K27 | 31 | Very Wide Flood 120° | 2700 K | 80 | 3 | 54 | 15 | 93 | C19 | ON/OFF |
| | | Focal | Pedestrian Pole | *8 LEDS Proyectors 8 (H=5,5 m)* | C1 | | URBIDERMIS | ARNE S 11W 8 2700 350 WF | 2700 ARPS08A3WF | 15 | Wide Flood 60° | 2700 K | 80 | 11 | 953 | 610 | 165 | *C08* | DALI |
| | | | Pedestrian Pole | *12 LEDS Proyectors (H=5,5 m)* | C3 | | URBIDERMIS | ARNE S 15W 12 2700 350 LB | 2700 ARPS12A3LB | 2 | Urban Lightblade LB | 2700 K | 80 | 15 | 1 370 | 1 507 | 30 | *C08* | DALI |
| | Architectural | Background | Behind the perimeter fence | *(L=3m)* | T4 | | IGUZZINI | Underscore IN/OUT | EA25 | 62 | Beam angle 120° | 2600 K | 80 | 20 | 1 353 | 324 | 1 240 | C20 | DALI |
| | | | | | | | | | | | | | | Total Power | | | 4 348 | W | |
| | | | | | | | | | | | *Surface* | *2033* | *m2* | ***Installed Power Densit*** | | | ***2,14*** | ***W/m2*** | |

# Lighting Scenes and Control.

| | DAILY SCENE | WEEKEND | SPECIAL SCENES | | | MAINTENANCE |
|---|---|---|---|---|---|---|
| **Covered PLAZA** | Playfull | Book Fair | Auditorium | Workshop | Exhibition | General |
| **MANSO Square** | Encounter | Guiding | Guiding | Guiding | Guiding | General |
| **URGELL Square** | Guiding | Exchange | Guiding | Guiding | Guiding | General |

| | ATMOSPHERE | LIGHTING | CODE | | COMMENTS | CIRCUIT | CONTROL | ESCENA DIARIA | FERIA DEL LIBRO | AUDITORIO | TALLER | EXPOSICIÓN | APAGADO | LIMPIEZA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Covered PLAZA** | Playfull | Performance | P1 | Surface Proyector | | C01 | DALI-2 | 0% | 0% | 100% | 0% | 0% | 0% | 0% |
| | | Playfull | P2 | Surface Proyector | | C02 | DALI-2 | 100% | 0% | 0% | 0% | 0% | 0% | 0% |
| | Cultural | Focal | D1 | Surface Downlight | | C03 | DALI-2 | 0% | 100% | 0% | 50% | 50% | 0% | 0% |
| | | General | D2 | Surface mounted lineal ligh | Daylight Sensor | C04 | **DALI-2** | 100% | 100% | 50% | 100% | 100% | 0% | 100% |
| | Historical | Wallwash | L1 | Recessed lineal light | | C05 | DALI | 100% | 100% | 50% | 100% | 50% | 0% | 0% |
| | | Indirect | T1 | Recessed in column niche | | C06 | DALI | 100% | 100% | 50% | 100% | 50% | 0% | 100% |
| | | Indirect | L2 | Recessed in wall niche | | C07 | DALI | 30% | 30% | 30% | 30% | 30% | 0% | 30% |
| **MANSO Square** | Encounter | Focal | C1 | Pedestrian Pole | | C08 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 100% |
| | | Focal | C2 | Pedestrian Pole | | C08 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 100% |
| | | Indirect | T2 | LED strip under benches | | C09 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 0% |
| | | Indirect | T3 | LED strio under handrail | Digital LED | C10 | **SPI+DMX** | 70% | 70% | 70% | 70% | 70% | 0% | 0% |
| | Resting | Guidance | A1 | Step Light | | C11 | **ON/OFF** | 100% | 100% | 100% | 100% | 100% | 0% | 0% |
| | | Indirect | B1 | Garden Luminaire | | C12 | ON/OFF | 100% | 100% | 100% | 100% | 100% | 0% | 0% |
| | | Indirect | T2 | LED strip around the garden | | C13 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 0% |
| | Architectural | Background | T4 | Behind the perimeter fence | | C14 | DALI | 50% | 50% | 50% | 50% | 50% | 0% | 0% |
| | | Background | P3 | Inside the market hall | *INDOOR* | C15 | DALI-2 | 50% | 50% | 50% | 50% | 50% | 0% | 0% |
| **URGELL Square** | Exchange | Focal | L3 | Recessed mounted in the ceiling | | C16 | DALI-2 | 0% | 90% | 0% | 0% | 0% | 0% | 0% |
| | | Indirect | T4 | Recessed in ceiling niche | | C17 | DALI | 50% | 100% | 50% | 50% | 50% | 0% | 100% |
| | Guiding | Guidance | T2 | LED strio under handrail | | C18 | DALI | 70% | 70% | 70% | 70% | 70% | 0% | 0% |
| | | Guidance | A1 | Step Light | | C19 | ON/OFF | 100% | 100% | 100% | 100% | 100% | 0% | 0% |
| | | Focal | C1 | Pedestrian Pole | | C08 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 100% |
| | | Focal | C3 | Pedestrian Pole | | C08 | DALI | 100% | 100% | 100% | 100% | 100% | 0% | 100% |
| | Architectural | Background | T4 | Behind the perimeter fence | | C14 | DALI | 50% | 50% | 50% | 50% | 50% | 0% | 0% |

# Control Wiring.